

RAPID ASSESSMENT OF WETLAND FUNCTIONAL VALUES FOR THE WAUKESHA WEST BYPASS ALTERNATIVE ROUTES

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Section 1

RAPID ASSESSMENTS FOR WETLAND FUNCTIONAL VALUES

Wisconsin Department of Natural Resources

RAPID ASSESSMENT METHODOLOGY FOR EVALUATING WETLAND FUNCTIONAL VALUES

GENERAL INFORMATION

Name of Wetland: Plant Community Area No. 1
Owner(s): Waukesha County Parks & Land Use – Tax Key No. WAKT1361976004 Robert F. & Carol O. Smart Revocable Trust – Tax Key No. WAKT1361975 Merlyn Minster & Gary Lagon – Tax Key No. WAKT1364998001
Location: Waukesha County; NE ¼ & SE ¼, Section 17, Township 6N, Range 19E
Project Name: Proposed Waukesha West Bypass
Evaluator(s): Donald M. Reed, PhD., Chief Biologist; Lawrence A. Leitner, PhD., Principal Biologist; Christopher J. Jors, Biologist, Southeastern Wisconsin Regional Planning Commission
Date(s) of Site Visit(s): August 4 and 25, 2011

Description of seasonality limitations of this inspection due to time of year of the evaluation and/or current hydrologic and climatologic conditions (e.g. after heavy rains, snow or ice cover, during drought year, during spring flood, during bird migration): **Precipitation records in 2011 indicate normal to below normal precipitation (0 to -1 inches) for June, below normal (-1 to -2 inches) for July, and below normal (-2 to -3 inches) for August.**

WETLAND DESCRIPTION

Wisconsin Wetlands Inventory classification: S3/E2K
Wetland Type: shallow open water deep marsh <u>shallow marsh</u> seasonally flooded basin bog floodplain forest alder thicket sedge meadow coniferous swamp fen <u>wet meadow</u> <u>shrub-carr</u> low prairie <u>hardwood swamp</u>
Estimated size of wetland in acres: Study area wetland = 1.6 acres

SUMMARY OF FUNCTIONAL VALUES

Based on the results of the attached functional assessment, rate the significance of each of the functional values for the subject wetland and check the appropriate box. Complete the table as a summary.

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	N/A
Floral Diversity		X			
Wildlife Habitat			X		
Fishery Habitat			X		
Flood/Stormwater Attenuation		X			
Water Quality Protection			X		
Shoreline Protection		X			
Groundwater			X		
Aesthetics/Recreation/Education		X			

List any Special Features/"Red Flags": **Longear sunfish (*Lepomis megalotis*), a State-designated Threatened species, has been recorded by the Commission staff along this segment of Pebble**

Creek. Little brown bat (*Myotis lucifugus*), a State-designated Threatened species, has been observed by the Commission staff utilizing the bridge under CTH X. Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, has been identified by the Commission staff upstream of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff upstream of this location. In addition, Natural Heritage Inventory (NHI) identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. See page 5 for details.

SITE DESCRIPTION

I. HYDROLOGIC SETTING

A. Describe the geomorphology of the wetland:

- ☐ Depressional (includes slopes, potholes, small lakes, kettles, etc.)
- ☒ Riverine
- ☐ Lake Fringe
- ☐ Extensive Peatland

B. ☒ **Y** ☐ **N** Has the wetland hydrology been altered by ditching tiles, dams culverts well pumping, diversion of surface flow or changes to runoff within the watershed (circle those that apply)?
Past CTH X construction through wetland complex impeding & redirecting (ditching) natural flows under CTH X bridge

C. ☒ **Y** ☐ **N** Does the wetland have an inlet, outlet, or both (circle those that apply)?
Pebble Creek inlet from the northwest & outlet under CTH X bridge

D. ☒ **Y** ☐ **N** Is there any field evidence of wetland hydrology such as buttressed tree trunks, adventitious roots, drift lines, water marks, water stained leaves, soil mottling, claying, organic soils layer or oxidized rhizospheres (circle those that apply)? **Water marks observed in culvert under CTH X. Saturation at 8 inches & water table at 18 inches. Located in part within the Pebble Creek floodway. Geomorphic position.**

E. ☒ **Y** ☐ **N** Does the wetland have standing water, and if so what is the average depth in inches? Approximately how much of the wetland is inundated?
No standing water observed at sample site. However, surface water flow within Pebble Creek channel observed. Parts of wetland likely inundated in early growing season.

F. How is the hydroperiod (seasonal water level pattern) of the wetland classified?

- ☐ Permanently Flooded
- ☒ Seasonally Flooded (water absent at end of growing season)
- ☐ Saturated (surface water seldom present)
- ☐ Artificially Flooded
- ☐ Artificially Drained

G. ☒ **Y** ☐ **N** Is the wetland a navigable body of water or is a portion of the wetland below the ordinary high-water mark of a navigable water body? List any surface waters associated with the wetland or in proximity to the wetland (note approximate distance from the wetland and navigability determination). Note if there is a surface water connection to other wetlands.
Pebble Creek, which flows through the subject plant community area, is navigable. There is a surface water connection to other wetlands.

II. VEGETATION

A. Identify the vegetation communities present and the dominant species.

	floating leaved community dominated by:
	submerged aquatic community dominated by:
X	emergent community dominated by: Typha angustifolia & Phalaris arundinacea
X	shrub community dominated by: Salix spp. & Cornus spp. (No individual shrub species listed as dominant)
X	deciduous broad-leaved tree community dominated by: Salix nigra
	coniferous tree community dominated by:
	open sphagnum mat or bog
	sedge meadow/wet prairie community dominated by:
	other (explain)

B. Other plant species identified during site visit:

See attached species list

III. SOILS

A. NRCS Soil Map Classification: **Brookston silt loam (BsA) – poorly drained; Wet alluvial land (Ww); and Gravel pit (Gp)**

B. Field description: **Recorded August 4, 2011**

☒ Organic (histosol)? If so, is it a muck or a peat? **Muck (Histic Epipedon)**

☒ Mineral soil?

- Mottling gleying, sulfidic materials, iron or manganese concretions, organic streaking (circle those that apply)
- Soil Description: **See below**
- Depth of mottling/gleying: **Starts at surface**
- Depth of A Horizon: **14 inches**
- Munsell Color of matrix and mottles
 - Matrix below the A horizon: **N1/0**
 - Mottles: **7.5YR 4/6 Common/Prominent**

Depth (inches)	Matrix Color	Redox Concentrations Color	Redox Concentrations Abundance/Contrast	Texture
0-14	N1/0	7.5YR 4/6	Common/Prominent	Muck
14-18	N1/0	7.5YR 4/6	Common/Prominent	Clay
18-24	10YR 2/1			Clay

V. SURROUNDING LAND USES

A. What is the estimated area of the wetland watershed in acres? **70**

B. What are the surrounding land uses?

LAND-USE	ESTIMATED % OF WETLAND WATERSHED
Developed (Industrial/Commercial/Residential)	39
Agricultural/cropland	--
Agricultural/grazing	--
Forested (Upland)	10
Grassed recreation areas/parks	--
Old field	3
Highways or roads	5
Other (specify) : Wetland	13

VI. SITE SKETCH

See attached aerial map exhibit

FUNCTIONAL ASSESSMENT

The following assessment requires the evaluator to examine site conditions that provide evidence that a given functional value is present and to assess the significance of the wetland to perform those functions. Positive answers to questions indicate the presence of factors important for the function. The questions are not definitive and are only provided to guide the evaluation. After completing each section, the evaluator should consider the factors observed and use best professional judgement to rate the significance. The ratings should be recorded on page 1 of the assessment.

SPECIAL FEATURES/"RED FLAGS"

1. ☒ **Y** ☐ **N** Is the wetland in or adjacent to an area of special natural resource interest (NR 103.04, Wis. Adm. Code)? If so, check those that apply:
 - ☐ Cold water community as defined in s. NR 102.04(3)(b), Wis. Adm. Code, including trout streams, their tributaries, and trout lakes
 - ☐ Lakes Michigan and Superior and the Mississippi River
 - ☐ State or federal designated wild and scenic river
 - ☐ Designated state riverway
 - ☐ Designated state scenic urban waterway
 - ☒ Environmentally sensitive area or environmental corridor identified in an area-wide water quality management plan, special area management plan, special wetland inventory study, or an advanced delineation and identification study – **Primary environmental corridor; ADID wetland**
 - ☐ Calcareous fen
 - ☐ State park, forest, trail or recreation area
 - ☐ State and federal fish and wildlife refuges and fish and wildlife management areas
 - ☐ State or federal designated wilderness area
 - ☐ Designated or dedicated state natural area
 - ☐ Wild rice water listed in ch. NR 19.09, Wis. Adm. Code
 - ☐ Surface water identified as an outstanding or exceptional resource water in ch. NR 102, Wis. Adm. Code
2. ☒ **Y** ☐ **N** According to the Natural Heritage Inventory (Bureau of Endangered Resources) or direct observations, are there any rare, endangered, or threatened plant or animal species in, near, or using the wetland or adjacent lands? If so, list the species of concern: **Longear sunfish (*Lepomis megalotis*), a State-designated Threatened species, has been recorded by the Commission staff along this segment of Pebble Creek. Little brown bat (*Myotis lucifugus*), a State-designated Threatened species, has been observed by the Commission staff utilizing the culvert under CTH X. Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, has been identified by the Commission staff upstream of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff upstream of this location. In addition, Natural Heritage Inventory (NHI) identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. This broad NHI finding is based upon an 1845 record for this species typically found in dry prairies. Accordingly, it is very unlikely that this plant community area would support this species.**
3. ☐ **Y** ☒ **N** Is the project located in an area that requires a State Coastal Zone Management Plan consistency determination?

Floral Diversity

1. ☒ **Y** ☐ **N** Does the wetland support a variety of native plant species (i.e. not a monotypic stand of cattail or giant reed grass and/or not dominated by exotic species such as reed canary grass, brome grass, buckthorn, purple loosestrife, etc.)? **Western, more degraded portion of wetland dominated by Reed canary grass. Eastern part near Pebble Creek more diverse.**
2. ☐ **Y** ☒ **N** Is the wetland plant community regionally scarce or rare?

Wildlife and Fishery Habitat

1. List any species observed, evidenced (e.g. tracks, scat, nest/burrow, calls), or expected to utilize the wetland: **Northern pike determined by the Commission staff to be a resident fish species in this segment of Pebble Creek. Total of 29 species of fish recorded at this location including primary coldwater, secondary coolwater, and warmwater fish assemblages. Macroinvertebrate abundance and diversity are indicative of very good water quality in this reach.**

2. ☒ **Y** ☐ **N** Does the wetland contain a number of diverse vegetative cover types and a high degree of interspersed of those vegetation types? **Higher quality wetland adjacent to Pebble Creek**
3. ☒ **Y** ☐ **N** Is the estimated ratio of open water to cover between 30 and 70 percent? What is the estimated ratio? **5% - Open water in creek bed**
4. ☒ **Y** ☐ **N** Does the surrounding upland habitat likely support a variety of animal species?
Class I Wildlife Habitat
5. ☒ **Y** ☐ **N** Is the wetland part of or associated with a wildlife corridor or designated environmental corridor?
Class I Wildlife Habitat & Primary Environmental Corridor
6. ☒ **Y** ☐ **N** Is the surrounding habitat and/or the wetland itself a large tract of undeveloped land important for wildlife that requires large home ranges (e.g. bear, woodland passerines)?
7. ☒ **Y** ☐ **N** Is the surrounding habitat and/or the wetland itself a relatively large tract of undeveloped land within an urbanized environment that is important for wildlife?
8. ☒ **Y** ☐ **N** Are there other wetland areas near the subject wetland that may be important to wildlife?
Important wetlands for wildlife along the Pebble Creek corridor
9. ☒ **Y** ☐ **N** Is the wetland contiguous with a permanent waterbody or periodically inundated for sufficient periods of time to provide spawning/nursery habitat for fish? **Pebble Creek supports a resident population of Northern pike and portions of this area are within the modeled 2-year floodplain which is likely to support spawning habitat.**
10. ☒ **Y** ☐ **N** Can the wetland provide significant food base for fish and wildlife (e.g. insects, crustaceans, voles, forage fish, amphibians, reptiles, shrews, wild rice, wild celery, duckweed, pondweeds, watermeal, bulrushes, bur reeds, arrowhead, smartweeds, millets...)?
11. ☒ **Y** ☐ **N** Is the wetland located in a priority watershed/township as identified in the Upper Mississippi and Great Lakes Joint Venture of the North American Waterfowl Management Plan?
12. ☒ **Y** ☐ **N** Is the wetland providing habitat that is scarce to the region?

Flood and Stormwater Storage/Attenuation

1. ☒ **Y** ☐ **N** Are there steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within the watershed (circle those that apply)? **Roadways, driveways, and structures associated with residential development**
2. ☒ **Y** ☐ **N** Does the wetland significantly reduce run-off velocity due to its size, configuration, braided flow patterns, or vegetation type and density? **Runoff velocity is significantly reduced when stormwater enters the subject wetland**
3. ☒ **Y** ☐ **N** Does the wetland show evidence of flashy water level responses to storm events (debris marks, erosion lines, stormwater inputs, channelized inflow)?
4. ☒ **Y** ☐ **N** Is there a natural feature or human-made structure impeding drainage from the wetland that causes backwater conditions? **A rock-spillway was constructed to protect the bridge abutment footings at CTH X. That is causing an approximate 4-foot backwater effect within the stream and wetland. This structure is maintaining the deepwater pool habitats for Northern pike in this reach, and this should be protected when this bridge is replaced.**
5. ☒ **Y** ☐ **N** Considering the size of the wetland area in relation to the size of its watershed, at any time during the year is water likely to reach the wetland's storage capacity (i.e. the level of easily observable wetland vegetation)? [For some cases where greater documentation is required, one should determine if the wetland has capacity to hold 25% of the run-off from a 2 year-24 hour storm event.] **But it is important to note that portions of this wetland are within the modeled 100-year floodplain and floodway.**

6. ☒ **Y** ☐ **N** Considering the location of the wetland in relation to the associated surface water watershed, is the wetland important for attenuating or storing flood or stormwater peaks (i.e. is the wetland located in the mid or lower reaches of the watershed)? **Portions of this wetland are within the modeled 100-year floodplain and floodway.**

Water Quality Protection

1. ☒ **Y** ☐ **N** Does the wetland receive overland flow or direct discharge of stormwater as a primary source of water (circle that which applies)? **Primary source of water from Pebble Creek**
2. ☒ **Y** ☐ **N** Do the surrounding land uses have the potential to deliver significant nutrient and/or sediment loads to the wetland? **Road salt and sediments from CTH X & nutrient loading from surrounding residential development**
3. ☒ **Y** ☐ **N** Based on your answers to the flood/stormwater section above, does the wetland perform significant flood/stormwater attenuation (residence time to allow settling)?
4. ☒ **Y** ☐ **N** Does the wetland have significant vegetative density to decrease water energy and allow settling of suspended materials?
5. ☒ **Y** ☐ **N** Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface water?
6. ☐ **Y** ☒ **N** Are algal blooms, heavy macrophyte growth, or other signs of excess nutrient loading to the wetland apparent (or historically reported)?

Shoreline Protection

1. ☒ **Y** ☐ **N** Is the wetland in a lake fringe or riverine setting? If NO, STOP and enter "not applicable" for this function. If YES, then answer the applicable questions.
2. ☐ **Y** ☒ **N** Is the shoreline exposed to constant wave action caused by long wind fetch or boat traffic?
3. ☒ **Y** ☐ **N** Is the shoreline and shallow littoral zone vegetated with submerged or emergent vegetation in the swash zone that decrease wave energy or perennial wetland species that form dense root mats and/or species that have strong stems that are resistant to erosive forces?
4. ☒ **Y** ☐ **N** Is the stream bank prone to erosion due to unstable soils, land uses, or ice floes?
5. ☒ **Y** ☐ **N** Is the stream bank vegetated with densely rooted shrubs that provide upper bank stability?

Groundwater Recharge and Discharge

1. ☒ **Y** ☐ **N** Related to discharge, are there observable (or reported) springs located in the wetland, physical indicators of springs such as marl soil, or vegetation indicators such as watercress or marsh marigold present that tend to indicate the presence of groundwater springs? **Springs reported and observed throughout Pebble Creek watershed**
2. ☒ **Y** ☐ **N** Related to discharge, may the wetland contribute to the maintenance of base flow in a stream?
3. ☒ **Y** ☐ **N** Related to recharge, is the wetland located on or near a groundwater divide (e.g. a topographic high)? **A portion of Plant Community Area No. 1 is identified in SEWRPC Planning Report No. 52, A Regional Water Supply Plan for Southeastern Wisconsin, Volumes 1 and 2, as having a high groundwater recharge potential. (See map)**

Aesthetics/Recreation/Education and Science

1. ☒ **Y** ☒ **N** Is the wetland visible from any of the following kinds of vantage points: roads, public lands, houses, and/or businesses? (Circle all that apply.)
2. ☒ **Y** ☒ **N** Is the wetland in or near any population centers? **City of Waukesha**
3. ☒ **Y** ☒ **N** Is any part of the wetland in public or conservation ownership? **Waukesha County Parks & Land Use**
4. ☒ **Y** ☒ **N** Does the public have direct access to the wetland from public roads or waterways? (Circle those that apply.) **Direct access limited to portion of wetland owned by Waukesha County and by canoe via Pebble Creek.**
5. Is the wetland itself relatively free of obvious human influences, such as:
 - a. ☒ **Y** ☒ **N** Buildings?
 - b. ☒ **Y** ☒ **N** Roads?
 - c. ☒ **Y** ☒ **N** Other structures?
 - d. ☒ **Y** ☒ **N** Trash?
 - e. ☒ **Y** ☒ **N** Pollution?
 - f. ☒ **Y** ☒ **N** Filling?
 - g. ☒ **Y** ☒ **N** Dredging/drainage?
 - h. ☒ **Y** ☒ **N** Domination by non-native vegetation?
6. Is the surrounding viewshed relatively free of obvious human influences, such as:
 - a. ☒ **Y** ☒ **N** Buildings?
 - b. ☒ **Y** ☒ **N** Roads?
 - c. ☒ **Y** ☒ **N** Other structures?
7. ☒ **Y** ☒ **N** Is the wetland organized into a variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water)?
8. ☒ **Y** ☒ **N** Does the wetland add to the variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water) within the landscape as a whole?
9. Does the wetland encourage exploration because any of the following factors are present:
 - a. ☒ **Y** ☒ **N** Long views within the wetland?
 - b. ☒ **Y** ☒ **N** Long views in the viewshed adjacent to the wetland?
 - c. ☒ **Y** ☒ **N** Convoluted edges within and/or around the wetland border?
 - d. ☒ **Y** ☒ **N** The wetland provides a different (and perhaps more natural/complex) kind of environment from the surrounding land covers?
10. ☒ **Y** ☒ **N** Is the wetland currently being used for (or does it have the potential to be used for) the following recreational activities? (Check all that apply.)

ACTIVITY	CURRENT USE	POTENTIAL USE
Nature study/photography		X
Hiking/biking/skiing		X
Hunting/fishing/trapping		X
Boating/canoeing		X
Food harvesting		
Others (list)		

11. ☒ **Y** ☒ **N** Is the wetland currently being used, and/or does it have the potential for use for educational or scientific study purposes (circle that which applies)?

Wisconsin Department of Natural Resources

RAPID ASSESSMENT METHODOLOGY FOR EVALUATING WETLAND FUNCTIONAL VALUES

GENERAL INFORMATION

Name of Wetland: Plant Community Area No. 2
Owner(s): Waukesha County Parks & Land Use – Tax Key No. WAKT1361974 St. John Neumann Congregation – Tax Key No. WAKC1364999002
Location: Waukesha County; NE ¼ Section 17, Township 6N, Range 19E
Project Name: Proposed Waukesha West Bypass
Evaluator(s): Donald M. Reed, PhD., Chief Biologist; Lawrence A. Leitner, PhD., Principal Biologist; Christopher J. Jors, Biologist, Southeastern Wisconsin Regional Planning Commission
Date(s) of Site Visit(s): August 25, 2011

Description of seasonality limitations of this inspection due to time of year of the evaluation and/or current hydrologic and climatologic conditions (e.g. after heavy rains, snow or ice cover, during drought year, during spring flood, during bird migration): **Precipitation records in 2011 indicate normal to below normal precipitation (0 to -1 inches) for June, below normal (-1 to -2 inches) for July, and below normal (-2 to -3 inches) for August.**

WETLAND DESCRIPTION

Wisconsin Wetlands Inventory classification: E2K
Wetland Type: shallow open water deep marsh shallow marsh seasonally flooded basin bog floodplain forest alder thicket sedge meadow coniferous swamp fen <u>wet meadow</u> <u>shrub-carr</u> low prairie hardwood swamp
Estimated size of wetland in acres: Study area wetland = 0.3 acres

SUMMARY OF FUNCTIONAL VALUES

Based on the results of the attached functional assessment, rate the significance of each of the functional values for the subject wetland and check the appropriate box. Complete the table as a summary.

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	N/A
Floral Diversity	X				
Wildlife Habitat			X		
Fishery Habitat			X		
Flood/Stormwater Attenuation		X			
Water Quality Protection			X		
Shoreline Protection		X			
Groundwater			X		
Aesthetics/Recreation/Education		X			

List any Special Features/"Red Flags": **Longear sunfish (*Lepomis megalotis*), a State-designated Threatened species, has been recorded by the Commission staff along this segment of Pebble Creek. Little brown bat (*Myotis lucifugus*), a State-designated Threatened species, has been observed by the Commission staff "hunting" over the wetland and creek area in and adjacent to this**

plant community area. They have also been observed utilizing cavity trees (nursery?) in this plant community area. Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, has been identified by the Commission staff upstream of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff upstream of this location. In addition, Natural Heritage Inventory (NHI) identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. See page 5 for details.

SITE DESCRIPTION

I. HYDROLOGIC SETTING

A. Describe the geomorphology of the wetland:

- ☐ Depressional (includes slopes, potholes, small lakes, kettles, etc.)
- ☒ Riverine
- ☐ Lake Fringe
- ☐ Extensive Peatland

B. **Y** **N** Has the wetland hydrology been altered by ditching tiles, dams, culverts well pumping, diversion of surface flow or changes to runoff within the watershed (circle those that apply)?
Past CTH X construction through wetland complex impeding natural flows from northwest directing flows directly into stream channel

C. **Y** **N** Does the wetland have an inlet, outlet, or both (circle those that apply)?
Pebble Creek inlet from under bridge at CTH X and outlet downstream

D. **Y** **N** Is there any field evidence of wetland hydrology such as buttressed tree trunks, adventitious roots, drift lines, water marks, water stained leaves, soil mottling, gleying, organic soils layer, or oxidized rhizospheres (circle those that apply)? **Saturation at 8 inches & water table at 11.5 inches. Located within Pebble Creek floodway. Geomorphic position.**

E. **Y** **N** Does the wetland have standing water, and if so what is the average depth in inches? Approximately how much of the wetland is inundated?
No standing water observed at sample site. However, surface water flow within Pebble Creek channel observed. Parts of wetland likely inundated in early growing season.

F. How is the hydroperiod (seasonal water level pattern) of the wetland classified?

- ☐ Permanently Flooded
- ☒ Seasonally Flooded (water absent at end of growing season)
- ☐ Saturated (surface water seldom present)
- ☐ Artificially Flooded
- ☐ Artificially Drained

G. **Y** **N** Is the wetland a navigable body of water or is a portion of the wetland below the ordinary high-water mark of a navigable water body? List any surface waters associated with the wetland or in proximity to the wetland (note approximate distance from the wetland and navigability determination). Note if there is a surface water connection to other wetlands.
Pebble Creek, which flows through the subject plant community area, is navigable. There is a surface water connection to other wetlands.

II. VEGETATION

A. Identify the vegetation communities present and the dominant species.

	floating leaved community dominated by:
	submerged aquatic community dominated by:
X	emergent community dominated by: Phalaris arundinacea
X	shrub community dominated by: Salix interior
	deciduous broad-leaved tree community dominated by:
	coniferous tree community dominated by:
	open sphagnum mat or bog
	sedge meadow/wet prairie community dominated by:
	other (explain)

B. Other plant species identified during site visit:

See attached species list

III. SOILS

A. NRCS Soil Map Classification: **Wet alluvial land (Ww)**

B. Field description: **Recorded August 25, 2011**

☐ Organic (histosol)? If so, is it a muck or a peat?

☒ Mineral soil?

- Mottling gleying, sulfidic materials, iron or manganese concretions, organic streaking (circle those that apply)
- Soil Description: **See below**
- Depth of mottling/gleying: **9.5 inches**
- Depth of A Horizon: **9.5 inches**
- Munsell Color of matrix and mottles
 - Matrix below the A horizon: **10Y 2.5/1**
 - Mottles: **10YR 4/6 Common/Prominent**

Depth (inches)	Matrix Color	Redox Concentrations Color	Redox Concentrations Abundance/Contrast	Texture
0-9.5	5Y 2.5/1			Clay loam
9.5-21	10Y 2.5/1	10YR 4/6	Common/Prominent	Silty clay loam
21-29	10Y 2.5/1	10YR 4/6	Common/Prominent	Silt loam

V. SURROUNDING LAND USES

A. What is the estimated area of the wetland watershed in acres? **8**

B. What are the surrounding land uses?

LAND-USE	ESTIMATED % OF WETLAND WATERSHED
Developed (Industrial/Commercial/Residential)	--
Agricultural/cropland	--
Agricultural/grazing	--
Forested (Upland)	1
Grassed recreation areas/parks	--
Old field	4.5
Highways or roads	1
Other (specify) : Wetland	1.5

VI. SITE SKETCH

See attached aerial map exhibit

FUNCTIONAL ASSESSMENT

The following assessment requires the evaluator to examine site conditions that provide evidence that a given functional value is present and to assess the significance of the wetland to perform those functions. Positive answers to questions indicate the presence of factors important for the function. The questions are not definitive and are only provided to guide the evaluation. After completing each section, the evaluator should consider the factors observed and use best professional judgement to rate the significance. The ratings should be recorded on page 1 of the assessment.

SPECIAL FEATURES/"RED FLAGS"

1. ☒ **Y** ☐ **N** Is the wetland in or adjacent to an area of special natural resource interest (NR 103.04, Wis. Adm. Code)? If so, check those that apply:
 - ☐ Cold water community as defined in s. NR 102.04(3)(b), Wis. Adm. Code, including trout streams, their tributaries, and trout lakes
 - ☐ Lakes Michigan and Superior and the Mississippi River
 - ☐ State or federal designated wild and scenic river
 - ☐ Designated state riverway
 - ☐ Designated state scenic urban waterway
 - ☒ Environmentally sensitive area or environmental corridor identified in an area-wide water quality management plan, special area management plan, special wetland inventory study, or an advanced delineation and identification study – **Primary environmental corridor; ADID wetland**
 - ☐ Calcareous fen
 - ☐ State park, forest, trail or recreation area
 - ☐ State and federal fish and wildlife refuges and fish and wildlife management areas
 - ☐ State or federal designated wilderness area
 - ☐ Designated or dedicated state natural area
 - ☐ Wild rice water listed in ch. NR 19.09, Wis. Adm. Code
 - ☐ Surface water identified as an outstanding or exceptional resource water in ch. NR 102, Wis. Adm. Code
2. ☒ **Y** ☐ **N** According to the Natural Heritage Inventory (Bureau of Endangered Resources) or direct observations, are there any rare, endangered, or threatened plant or animal species in, near, or using the wetland or adjacent lands? If so, list the species of concern: **Longear sunfish (*Lepomis megalotis*), a State-designated Threatened species, has been recorded by the Commission staff along this segment of Pebble Creek. Little brown bat (*Myotis lucifugus*), a State-designated Threatened species, has been observed by the Commission staff "hunting" over the wetland and creek area in and adjacent to this plant community area. They have also been observed utilizing cavity trees (nursery?) in this plant community area.. Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, has been identified by the Commission staff just upstream of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff upstream of this location. In addition, Natural Heritage Inventory (NHI) identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. This broad NHI finding is based upon an 1845 record for this species typically found in dry prairies. Accordingly, it is very unlikely that this plant community area would support this species.**
3. ☐ **Y** ☒ **N** Is the project located in an area that requires a State Coastal Zone Management Plan consistency determination?

Floral Diversity

1. ☒ **Y** ☐ **N** Does the wetland support a variety of native plant species (i.e. not a monotypic stand of cattail or giant reed grass and/or not dominated by exotic species such as reed canary grass, brome grass, buckthorn, purple loosestrife, etc.)?
2. ☒ **Y** ☐ **N** Is the wetland plant community regionally scarce or rare?

Wildlife and Fishery Habitat

1. List any species observed, evidenced (e.g. tracks, scat, nest/burrow, calls), or expected to utilize the wetland: **Northern pike determined by the Commission staff to be a resident fish species in this segment of Pebble Creek. Total of 29 species of fish recorded at this location including primary coldwater, secondary coolwater, and warmwater fish assemblages. Macroinvertebrate abundance and diversity are indicative of very good water quality in this reach. Blue-winged teal and Mallard duck observed in this reach of the creek in the past; raccoon and muskrat associated with the creek. Red-winged blackbird nesting, Kingbird, White-tailed deer, and Little brown bat observed in the recent past.**
2. **Y(N)** Does the wetland contain a number of diverse vegetative cover types and a high degree of interspersed of those vegetation types?
3. **Y(N)** Is the estimated ratio of open water to cover between 30 and 70 percent? What is the estimated ratio? **5% - Open water in creek bed**
4. **Y(N)** Does the surrounding upland habitat likely support a variety of animal species?
Class II Wildlife Habitat
5. **Y(N)** Is the wetland part of or associated with a wildlife corridor or designated environmental corridor?
Class I Wildlife Habitat & Primary environmental corridor
6. **Y(N)** Is the surrounding habitat and/or the wetland itself a large tract of undeveloped land important for wildlife that requires large home ranges (e.g. bear, woodland passerines)?
7. **Y(N)** Is the surrounding habitat and/or the wetland itself a relatively large tract of undeveloped land within an urbanized environment that is important for wildlife?
8. **Y(N)** Are there other wetland areas near the subject wetland that may be important to wildlife?
Important wetlands for wildlife along the Pebble Creek and Fox River corridors
9. **Y(N)** Is the wetland contiguous with a permanent waterbody or periodically inundated for sufficient periods of time to provide spawning/nursery habitat for fish? **Pebble Creek supports a resident population of Northern pike and portions of this area are within the modeled 2-year floodplain which is likely to support spawning habitat.**
10. **Y(N)** Can the wetland provide significant food base for fish and wildlife (e.g. insects, crustaceans, voles, forage fish, amphibians, reptiles, shrews, wild rice, wild celery, duckweed, pondweeds, watermeal, bulrushes, bur reeds, arrowhead, smartweeds, millets...)?
11. **Y(N)** Is the wetland located in a priority watershed/township as identified in the Upper Mississippi and Great Lakes Joint Venture of the North American Waterfowl Management Plan?
12. **Y(N)** Is the wetland providing habitat that is scarce to the region?

Flood and Stormwater Storage/Attenuation

1. **Y(N)** Are there steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within the watershed (circle those that apply)? **Steep shoulders and large impervious surfaces along CTH X**
2. **Y(N)** Does the wetland significantly reduce run-off velocity due to its size, configuration, braided flow patterns, or vegetation type and density? **Runoff velocity is significantly reduced when stormwater runoff enters the subject wetland**
3. **Y(N)** Does the wetland show evidence of flashy water level responses to storm events (debris marks, erosion lines, stormwater inputs, channelized inflow)?
4. **Y(N)** Is there a natural feature or human-made structure impeding drainage from the wetland that causes backwater conditions?

5. ☒ **N** Considering the size of the wetland area in relation to the size of its watershed, at any time during the year is water likely to reach the wetland's storage capacity (i.e. the level of easily observable wetland vegetation)? [For some cases where greater documentation is required, one should determine if the wetland has capacity to hold 25% of the run-off from a 2 year-24 hour storm event.] **But it is important to note that portions of this wetland are within the modeled 100-year floodplain and floodway.**
6. ☒ **N** Considering the location of the wetland in relation to the associated surface water watershed, is the wetland important for attenuating or storing flood or stormwater peaks (i.e. is the wetland located in the mid or lower reaches of the watershed)? **Portions of this wetland are within the modeled 100-year floodplain and floodway.**

Water Quality Protection

1. ☒ **N** Does the wetland receive overland flow or direct discharge of stormwater as a primary source of water (circle that which applies)? **Primary source of water contribution to wetland is from Pebble Creek**
2. ☒ **N** Do the surrounding land uses have the potential to deliver significant nutrient and/or sediment loads to the wetland? **Road salt from CTH X**
3. ☒ **N** Based on your answers to the flood/stormwater section above, does the wetland perform significant flood/stormwater attenuation (residence time to allow settling)?
4. ☒ **N** Does the wetland have significant vegetative density to decrease water energy and allow settling of suspended materials?
5. ☒ **N** Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface water?
6. ☒ **N** Are algal blooms, heavy macrophyte growth, or other signs of excess nutrient loading to the wetland apparent (or historically reported)?

Shoreline Protection

1. ☒ **N** Is the wetland in a lake fringe or riverine setting? If NO, STOP and enter "not applicable" for this function. If YES, then answer the applicable questions.
2. ☒ **N** Is the shoreline exposed to constant wave action caused by long wind fetch or boat traffic?
3. ☒ **N** Is the shoreline and shallow littoral zone vegetated with submerged or emergent vegetation in the swash zone that decrease wave energy or perennial wetland species that form dense root mats and/or species that have strong stems that are resistant to erosive forces?
4. ☒ **N** Is the stream bank prone to erosion due to unstable soils, land uses, or ice floes?
5. ☒ **N** Is the stream bank vegetated with densely rooted shrubs that provide upper bank stability?

Groundwater Recharge and Discharge

1. ☒ **N** Related to discharge, are there observable (or reported) springs located in the wetland, physical indicators of springs such as marl soil, or vegetation indicators such as watercress or marsh marigold present that tend to indicate the presence of groundwater springs? **Springs reported and observed throughout Pebble Creek watershed**
2. ☒ **N** Related to discharge, may the wetland contribute to the maintenance of base flow in a stream?

3. ☒ ☐ Related to recharge, is the wetland located on or near a groundwater divide (e.g. a topographic high)?

Aesthetics/Recreation/Education and Science

1. ☒ ☐ Is the wetland visible from any of the following kinds of vantage points: roads, public lands, houses, and/or businesses? (Circle all that apply.)

2. ☒ ☐ Is the wetland in or near any population centers? **City of Waukesha**

3. ☒ ☐ Is any part of the wetland in public or conservation ownership? **Waukesha County Parks & Land Use**

4. ☒ ☐ Does the public have direct access to the wetland from public roads or waterways? (Circle those that apply.) **Direct access to the portion of wetland owned by Waukesha County and by canoe via Pebble Creek.**

5. Is the wetland itself relatively free of obvious human influences, such as:

- a. ☒ ☐ Buildings? e. ☒ ☐ Pollution?
 b. ☒ ☐ Roads? f. ☒ ☐ Filling?
 c. ☒ ☐ Other structures? g. ☒ ☐ Dredging/drainage?
 d. ☒ ☐ Trash? h. ☒ ☐ Domination by non-native vegetation?

6. Is the surrounding viewshed relatively free of obvious human influences, such as:

- a. ☒ ☐ Buildings?
 b. ☒ ☐ Roads?
 c. ☒ ☐ Other structures?

7. ☒ ☐ Is the wetland organized into a variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water)?

8. ☒ ☐ Does the wetland add to the variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water) within the landscape as a whole?

9. Does the wetland encourage exploration because any of the following factors are present:

- a. ☒ ☐ Long views within the wetland?
 b. ☒ ☐ Long views in the viewshed adjacent to the wetland?
 c. ☒ ☐ Convolutional edges within and/or around the wetland border?
 d. ☒ ☐ The wetland provides a different (and perhaps more natural/complex) kind of environment from the surrounding land covers?

10. ☒ ☐ Is the wetland currently being used for (or does it have the potential to be used for) the following recreational activities? (Check all that apply.)

ACTIVITY	CURRENT USE	POTENTIAL USE
Nature study/photography		X
Hiking/biking/skiing		X
Hunting/fishing/trapping		X
Boating/canoeing		X
Food harvesting		
Others (list)		

11. ☒ ☐ Is the wetland currently being used, and/or does it have the potential for use for educational or scientific study purposes (circle that which applies)?

Wisconsin Department of Natural Resources

RAPID ASSESSMENT METHODOLOGY FOR EVALUATING WETLAND FUNCTIONAL VALUES

GENERAL INFORMATION

Name of Wetland: Plant Community Area No. 3
Owner(s): Appears to be contained entirely in CTH X right-of-way
Location: Waukesha County; NE ¼ Section 17, Township 6N, Range 19E
Project Name: Proposed Waukesha West Bypass
Evaluator(s): Donald M. Reed, PhD., Chief Biologist; Lawrence A. Leitner, PhD., Principal Biologist; Christopher J. Jors, Biologist, Southeastern Wisconsin Regional Planning Commission
Date(s) of Site Visit(s): August 25, 2011

Description of seasonality limitations of this inspection due to time of year of the evaluation and/or current hydrologic and climatologic conditions (e.g. after heavy rains, snow or ice cover, during drought year, during spring flood, during bird migration): **Precipitation records in 2011 indicate normal to below normal precipitation (0 to -1 inches) for June, below normal (-1 to -2 inches) for July, and below normal (-2 to -3 inches) for August.**

WETLAND DESCRIPTION

Wisconsin Wetlands Inventory classification: E2K
Wetland Type: shallow open water deep marsh <u>shallow marsh</u> seasonally flooded basin bog floodplain forest alder thicket sedge meadow coniferous swamp fen <u>wet meadow</u> shrub-carr low prairie hardwood swamp
Estimated size of wetland in acres: Study area wetland = 0.1 acres

SUMMARY OF FUNCTIONAL VALUES

Based on the results of the attached functional assessment, rate the significance of each of the functional values for the subject wetland and check the appropriate box. Complete the table as a summary.

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	N/A
Floral Diversity	X				
Wildlife Habitat			X		
Fishery Habitat			X		
Flood/Stormwater Attenuation		X			
Water Quality Protection			X		
Shoreline Protection		X			
Groundwater		X			
Aesthetics/Recreation/Education		X			

List any Special Features/"Red Flags": **Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, observed by Commission staff in connected wetlands northwest of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff northwest of this location. In addition, Natural Heritage Inventory (NHI) identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough**

rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. See page 5 for details.

SITE DESCRIPTION

I. HYDROLOGIC SETTING

A. Describe the geomorphology of the wetland:

- ☐ Depressional (includes slopes, potholes, small lakes, kettles, etc.)
- ☒ Riverine
- ☐ Lake Fringe
- ☐ Extensive Peatland

B. **(Y)N** Has the wetland hydrology been altered by ditching tiles, dams, culverts well pumping, diversion of surface flow or changes to runoff within the watershed (circle those that apply)?
Past CTH X construction through wetland complex.

C. **(Y)N** Does the wetland have an inlet, outlet, or both (circle those that apply)? **Roadside ditch acts as an inlet & outlet.**

D. **(Y)N** Is there any field evidence of wetland hydrology such as buttressed tree trunks, adventitious roots, drift lines, water marks, water stained leaves, soil mottling/gleying, organic soils layer, or oxidized rhizospheres (circle those that apply)? **Although none recorded specifically, this wetland plant community area is part of the larger Pebble Creek/Fox River floodplain/wetland complex.**

E. **(Y)N** Does the wetland have standing water, and if so what is the average depth in inches? Approximately how much of the wetland is inundated?
No standing water observed during field inspection. However, parts of wetland likely inundated in early growing season.

F. How is the hydroperiod (seasonal water level pattern) of the wetland classified?

- ☐ Permanently Flooded
- ☒ Seasonally Flooded (water absent at end of growing season)
- ☐ Saturated (surface water seldom present)
- ☐ Artificially Flooded
- ☐ Artificially Drained

G. **(Y)N** Is the wetland a navigable body of water or is a portion of the wetland below the ordinary high-water mark of a navigable water body? List any surface waters associated with the wetland or in proximity to the wetland (note approximate distance from the wetland and navigability determination). Note if there is a surface water connection to other wetlands. **This plant community area portion of the wetland complex is not part of a navigable body of water. Nor is it below the Ordinary High Water Mark. However, this wetland plant community area is part of the larger Pebble Creek wetland complex and is approximately 400 feet from the navigable portion of Pebble Creek.**

II. VEGETATION

A. Identify the vegetation communities present and the dominant species.

	floating leaved community dominated by:
	submerged aquatic community dominated by:
X	emergent community dominated by: Phalaris arundinacea and Typha latifolia
	shrub community dominated by:
	deciduous broad-leaved tree community dominated by:
	coniferous tree community dominated by:
	open sphagnum mat or bog
	sedge meadow/wet prairie community dominated by:
	other (explain)

B. Other plant species identified during site visit:

See attached species list

III. SOILS

A. NRCS Soil Map Classification: **Houghton muck (HtA) – Very Poorly Drained**

B. Field description: **None recorded**

☐ Organic (histosol)? If so, is it a muck or a peat?

☐ Mineral soil?

- Mottling, gleying, sulfidic materials, iron or manganese concretions, organic streaking (circle those that apply)
- Soil Description:
- Depth of mottling/gleying:
- Depth of A Horizon:
- Munsell Color of matrix and mottles
 - Matrix below the A horizon:
 - Mottles:

V. SURROUNDING LAND USES

A. What is the estimated area of the wetland watershed in acres? **2**

B. What are the surrounding land uses?

LAND-USE	ESTIMATED % OF WETLAND WATERSHED
Developed (Industrial/Commercial/Residential)	--
Agricultural/cropland	--
Agricultural/grazing	--
Forested (Upland)	--
Grassed recreation areas/parks	--
Old field	0.5
Highways or roads	0.5
Other (specify) : Wetland	1

VI. SITE SKETCH

See attached aerial map exhibit

FUNCTIONAL ASSESSMENT

The following assessment requires the evaluator to examine site conditions that provide evidence that a given functional value is present and to assess the significance of the wetland to perform those functions. Positive answers to questions indicate the presence of factors important for the function. The questions are not definitive and are only provided to guide the evaluation. After completing each section, the evaluator should consider the factors observed and use best professional judgement to rate the significance. The ratings should be recorded on page 1 of the assessment.

SPECIAL FEATURES/"RED FLAGS"

1. ☒ **Y** ☐ **N** Is the wetland in or adjacent to an area of special natural resource interest (NR 103.04, Wis. Adm. Code)? If so, check those that apply:
 - ☐ Cold water community as defined in s. NR 102.04(3)(b), Wis. Adm. Code, including trout streams, their tributaries, and trout lakes
 - ☐ Lakes Michigan and Superior and the Mississippi River
 - ☐ State or federal designated wild and scenic river
 - ☐ Designated state riverway
 - ☐ Designated state scenic urban waterway
 - ☒ Environmentally sensitive area or environmental corridor identified in an area-wide water quality management plan, special area management plan, special wetland inventory study, or an advanced delineation and identification study – **Primary environmental corridor; ADID wetland**
 - ☐ Calcareous fen
 - ☐ State park, forest, trail or recreation area
 - ☐ State and federal fish and wildlife refuges and fish and wildlife management areas
 - ☐ State or federal designated wilderness area
 - ☐ Designated or dedicated state natural area
 - ☐ Wild rice water listed in ch. NR 19.09, Wis. Adm. Code
 - ☐ Surface water identified as an outstanding or exceptional resource water in ch. NR 102, Wis. Adm. Code
2. ☒ **Y** ☐ **N** According to the Natural Heritage Inventory (Bureau of Endangered Resources) or direct observations, are there any rare, endangered, or threatened plant or animal species in, near, or using the wetland or adjacent lands? If so, list the species of concern: **Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, observed by Commission staff in connected wetlands northwest of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff northwest of this location. In addition, Natural Heritage Inventory (NHI) identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. This broad NHI finding is based upon an 1845 record for this species typically found in dry prairies. Accordingly, it is very unlikely that this plant community area would support this species.**
3. ☐ **Y** ☒ **N** Is the project located in an area that requires a State Coastal Zone Management Plan consistency determination?

Floral Diversity

1. ☐ **Y** ☒ **N** Does the wetland support a variety of native plant species (i.e. not a monotypic stand of cattail or giant reed grass and/or not dominated by exotic species such as reed canary grass, brome grass, buckthorn, purple loosestrife, etc.)?
2. ☐ **Y** ☒ **N** Is the wetland plant community regionally scarce or rare?

Wildlife and Fishery Habitat

1. List any species observed, evidenced (e.g. tracks, scat, nest/burrow, calls), or expected to utilize the wetland: **Raccoon and muskrat associated with nearby Pebble creek. Red-winged blackbird nesting, Kingbird, and White-tailed deer observed in the recent past.**
2. ☐ **Y** ☒ **N** Does the wetland contain a number of diverse vegetative cover types and a high degree of interspersed of those vegetation types?
3. ☐ **Y** ☒ **N** Is the estimated ratio of open water to cover between 30 and 70 percent? What is the estimated ratio? **Standing water limited to early growing season.**

4. ☒ ☐ Does the surrounding upland habitat likely support a variety of animal species?
5. ☒ ☐ Is the wetland part of or associated with a wildlife corridor or designated environmental corridor?
Class I Wildlife Habitat & Primary environmental corridor
6. ☒ ☐ Is the surrounding habitat and/or the wetland itself a large tract of undeveloped land important for wildlife that requires large home ranges (e.g. bear, woodland passerines)?
7. ☒ ☐ Is the surrounding habitat and/or the wetland itself a relatively large tract of undeveloped land within an urbanized environment that is important for wildlife?
8. ☒ ☐ Are there other wetland areas near the subject wetland that may be important to wildlife?
Important wetlands for wildlife along the Pebble Creek & Fox River corridor
9. ☒ ☐ Is the wetland contiguous with a permanent waterbody or periodically inundated for sufficient periods of time to provide spawning/nursery habitat for fish? **This plant community area is located along the northwestern edge of the Pebble Creek wetland complex that provides this function.**
10. ☒ ☐ Can the wetland provide significant food base for fish and wildlife (e.g. insects, crustaceans, voles, forage fish, amphibians, reptiles, shrews, wild rice, wild celery, duckweed, pondweeds, watermeal, bulrushes, bur reeds, arrowhead, smartweeds, millets...)? **This plant community area is located along the northwestern edge of the Pebble Creek wetland complex that provides this function.**
11. ☒ ☐ Is the wetland located in a priority watershed/township as identified in the Upper Mississippi and Great Lakes Joint Venture of the North American Waterfowl Management Plan?
12. ☒ ☐ Is the wetland providing habitat that is scarce to the region?

Flood and Stormwater Storage/Attenuation

1. ☒ ☐ Are there steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within the watershed (circle those that apply)? **Large impervious surfaces along CTH X**
2. ☒ ☐ Does the wetland significantly reduce run-off velocity due to its size, configuration, braided flow patterns, or vegetation type and density? **Runoff velocity is significantly reduced when stormwater enters the subject wetland**
3. ☒ ☐ Does the wetland show evidence of flashy water level responses to storm events (debris marks, erosion lines, stormwater inputs, channelized inflow)?
4. ☒ ☐ Is there a natural feature or human-made structure impeding drainage from the wetland that causes backwater conditions?
5. ☒ ☐ Considering the size of the wetland area in relation to the size of its watershed, at any time during the year is water likely to reach the wetland's storage capacity (i.e. the level of easily observable wetland vegetation)? [For some cases where greater documentation is required, one should determine if the wetland has capacity to hold 25% of the run-off from a 2 year-24 hour storm event.] **But it is important to note that this wetland is within the modeled 100-year floodplain.**
6. ☒ ☐ Considering the location of the wetland in relation to the associated surface water watershed, is the wetland important for attenuating or storing flood or stormwater peaks (i.e. is the wetland located in the mid or lower reaches of the watershed)? **This wetland is within the modeled 100-year floodplain.**

Water Quality Protection

1. ☒ Y ☐ N Does the wetland receive overland flow or direct discharge of stormwater as a primary source of water (circle that which applies)?
2. ☒ Y ☐ N Do the surrounding land uses have the potential to deliver significant nutrient and/or sediment loads to the wetland? **Road salt from CTH X**
3. ☒ Y ☐ N Based on your answers to the flood/stormwater section above, does the wetland perform significant flood/stormwater attenuation (residence time to allow settling)?
4. ☒ Y ☐ N Does the wetland have significant vegetative density to decrease water energy and allow settling of suspended materials?
5. ☒ Y ☐ N Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface water?
6. ☐ Y ☒ N Are algal blooms, heavy macrophyte growth, or other signs of excess nutrient loading to the wetland apparent (or historically reported)?

Shoreline Protection

1. ☒ Y ☐ N Is the wetland in a lake fringe or riverine setting? If NO, STOP and enter "not applicable" for this function. If YES, then answer the applicable questions. **This wetland plant community area is located along the northwestern edge of a wetland complex associated with the confluence of Pebble Creek with the Fox (Illinois) River**
2. ☐ Y ☒ N Is the shoreline exposed to constant wave action caused by long wind fetch or boat traffic?
3. ☒ Y ☐ N Is the shoreline and shallow littoral zone vegetated with submerged or emergent vegetation in the swash zone that decrease wave energy or perennial wetland species that form dense root mats and/or species that have strong stems that are resistant to erosive forces? **This wetland plant community area is part of a wetland complex that provides this function.**
4. ☒ Y ☐ N Is the stream bank prone to erosion due to unstable soils, land uses, or ice floes? **This wetland plant community area is part of a wetland complex, the shoreline edge of which may experience ice flows.**
5. ☒ Y ☐ N Is the stream bank vegetated with densely rooted shrubs that provide upper bank stability? **This wetland plant community area is part of a wetland complex that provides this function.**

Groundwater Recharge and Discharge

1. ☒ Y ☐ N Related to discharge, are there observable (or reported) springs located in the wetland, physical indicators of springs such as marl soil, or vegetation indicators such as watercress or marsh marigold present that tend to indicate the presence of groundwater springs? **Springs reported and observed throughout Pebble Creek watershed**
2. ☒ Y ☐ N Related to discharge, may the wetland contribute to the maintenance of base flow in a stream?
3. ☐ Y ☒ N Related to recharge, is the wetland located on or near a groundwater divide (e.g. a topographic high)?

Aesthetics/Recreation/Education and Science

1. ☒ Y ☐ N Is the wetland visible from any of the following kinds of vantage points: roads, public lands, houses, and/or businesses? (Circle all that apply.)

2. ☒ Y ☐ N Is the wetland in or near any population centers? **City of Waukesha**
3. ☒ Y ☐ N Is any part of the wetland in public or conservation ownership? **Public road right-of-way**
4. ☒ Y ☐ N Does the public have direct access to the wetland from public roads or waterways? (Circle those that apply.)
5. Is the wetland itself relatively free of obvious human influences, such as:
- a. ☒ Y ☐ N Buildings?
 - b. ☒ Y ☐ N Roads?
 - c. ☒ Y ☐ N Other structures?
 - d. ☒ Y ☐ N Trash?
 - e. ☒ Y ☐ N Pollution?
 - f. ☒ Y ☐ N Filling?
 - g. ☒ Y ☐ N Dredging/drainage?
 - h. ☒ Y ☐ N Domination by non-native vegetation?
6. Is the surrounding viewshed relatively free of obvious human influences, such as:
- a. ☒ Y ☐ N Buildings?
 - b. ☒ Y ☐ N Roads?
 - c. ☒ Y ☐ N Other structures?
7. ☒ Y ☐ N Is the wetland organized into a variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water)? **This wetland plant community area is part of a larger wetland complex that is organized into a variety of separated areas of similar vegetation.**
8. ☒ Y ☐ N Does the wetland add to the variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water) within the landscape as a whole?
9. Does the wetland encourage exploration because any of the following factors are present:
- a. ☒ Y ☐ N Long views within the wetland?
 - b. ☒ Y ☐ N Long views in the viewshed adjacent to the wetland?
 - c. ☒ Y ☐ N Convolutional edges within and/or around the wetland border?
 - d. ☒ Y ☐ N The wetland provides a different (and perhaps more natural/complex) kind of environment from the surrounding land covers?
10. ☒ Y ☐ N Is the wetland currently being used for (or does it have the potential to be used for) the following recreational activities? (Check all that apply.)

ACTIVITY	CURRENT USE	POTENTIAL USE
Nature study/photography		X
Hiking/biking/skiing		X
Hunting/fishing/trapping		X
Boating/canoeing		
Food harvesting		
Others (list)		

11. ☒ Y ☐ N Is the wetland currently being used, and/or does it have the potential for use for educational or scientific study purposes (circle that which applies)?

Wisconsin Department of Natural Resources

RAPID ASSESSMENT METHODOLOGY FOR EVALUATING WETLAND FUNCTIONAL VALUES

GENERAL INFORMATION

Name of Wetland: Plant Community Area No. 4
Owner(s): Robert F. & Carol O. Smart Revocable Trust – Tax Key No. WAKT1361975 Christine K. Whitstone – Tax Key No. WAKT1362981
Location: Waukesha County; NW ¼ Section 17, Township 6N, Range 19E
Project Name: Proposed Waukesha West Bypass
Evaluator(s): Donald M. Reed, PhD., Chief Biologist; Lawrence A. Leitner, PhD., Principal Biologist; Christopher J. Jors, Biologist, Southeastern Wisconsin Regional Planning Commission
Date(s) of Site Visit(s): August 4 and 25, 2011; April 3, 2012

Description of seasonality limitations of this inspection due to time of year of the evaluation and/or current hydrologic and climatologic conditions (e.g. after heavy rains, snow or ice cover, during drought year, during spring flood, during bird migration): **Precipitation records in 2011 indicate normal to below normal precipitation (0 to -1 inches) for June, below normal (-1 to -2 inches) for July, and below normal (-2 to -3 inches) for August. Precipitation records for 2012 indicate normal precipitation (-0.5 to +0.5 inches) for February and slightly above normal (+0.5 to +1 inches) for March.**

WETLAND DESCRIPTION

Wisconsin Wetlands Inventory classification: S3/E2K & T3/S3K
Wetland Type: shallow open water deep marsh <u>shallow marsh</u> seasonally flooded basin bog floodplain forest alder thicket <u>sedge meadow</u> coniferous swamp fen <u>wet meadow</u> shrub-carr low prairie <u>hardwood swamp</u>
Estimated size of wetland in acres: Study area wetland = 2.2 acres

SUMMARY OF FUNCTIONAL VALUES

Based on the results of the attached functional assessment, rate the significance of each of the functional values for the subject wetland and check the appropriate box. Complete the table as a summary.

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	N/A
Floral Diversity			X		
Wildlife Habitat			X		
Fishery Habitat			X		
Flood/Stormwater Attenuation		X			
Water Quality Protection			X		
Shoreline Protection		X			
Groundwater			X		
Aesthetics/Recreation/Education		X			

List any Special Features/"Red Flags": **Part of this plant community area is identified as a Natural Area of local significance (NA-3) known as Pebble Creek Wetlands. Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, observed by Commission staff at this location.**

Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff northwest of this location. In addition, Natural Heritage Inventory (NHI) identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. See page 5 for details.

SITE DESCRIPTION

I. HYDROLOGIC SETTING

A. Describe the geomorphology of the wetland:

- ☒ Depressional (includes slopes, potholes, small lakes, kettles, etc.)
☐ Riverine
☐ Lake Fringe
☐ Extensive Peatland

B. **Y** **N** Has the wetland hydrology been altered by ditching tiles, dams culverts well pumping, diversion of surface flow or changes to runoff within the watershed (circle those that apply)?
Residential development along western fringe of this wetland.

C. **Y** **N** Does the wetland have an inlet, outlet, or both (circle those that apply)?
Spring fed wetland. Inlet includes a roadside ditch.

D. **Y** **N** Is there any field evidence of wetland hydrology such as buttressed tree trunks, adventitious roots, drift lines, water marks, water stained leaves, soil mottling, gleying, organic soils layer, or oxidized rhizospheres (circle those that apply)? **Groundwater discharge area. Soil saturation at surface as well as a high water table (see sample site data numbers 6, 8, 10 and 11)**

E. **Y** **N** Does the wetland have standing water, and if so what is the average depth in inches? Approximately how much of the wetland is inundated?
No standing water observed during field inspection. However, parts of wetland likely inundated in early growing season.

F. How is the hydroperiod (seasonal water level pattern) of the wetland classified?

- ☐ Permanently Flooded
☒ Seasonally Flooded (water absent at end of growing season)
☐ Saturated (surface water seldom present)
☐ Artificially Flooded
☐ Artificially Drained

G. **Y** **N** Is the wetland a navigable body of water or is a portion of the wetland below the ordinary high-water mark of a navigable water body? List any surface waters associated with the wetland or in proximity to the wetland (note approximate distance from the wetland and navigability determination). Note if there is a surface water connection to other wetlands. **This plant community area portion of the wetland complex is not part of a navigable body of water. Nor is it below the Ordinary High Water Mark. However, this wetland is part of the larger Pebble Creek wetland complex and is approximately 800 feet from the navigable portion of Pebble Creek.**

II. VEGETATION

A. Identify the vegetation communities present and the dominant species.

	floating leaved community dominated by:
	submerged aquatic community dominated by:
X	emergent community dominated by: Phalaris arundinacea; Typha latifolia present in scattered shallow marsh areas but not listed as dominant in this plant community area
	shrub community dominated by:
X	deciduous broad-leaved tree community dominated by: Populus tremuloides, Acer negundo and Impatiens capensis
	coniferous tree community dominated by:
	open sphagnum mat or bog
X	sedge meadow/wet prairie community dominated by: Carex stricta
	other (explain)

B. Other plant species identified during site visit:

See attached species list

III. SOILS

A. NRCS Soil Map Classification: **Wallkill silt loam (Wa) - Poorly Drained, Houghton muck (HtB) – Very Poorly Drained, Brookston silt loam (BsA) – Poorly Drained, Lamartine silt loam (LmB) – Somewhat Poorly Drained, and Pistakee silt loam (PrA) – Somewhat Poorly Drained**

B. Field description: **Four sample sites recorded in this plant community area with varying results– see Sample Site Nos. 6, 8, 10 and 11**

☐ Organic (histosol)? If so, is it a muck or a peat?

☐ Mineral soil?

- Mottling, gleying, sulfidic materials, iron or manganese concretions, organic streaking (circle those that apply)
- Soil Description:
- Depth of mottling/gleying:
- Depth of A Horizon:
- Munsell Color of matrix and mottles
 - Matrix below the A horizon:
 - Mottles:

V. SURROUNDING LAND USES

A. What is the estimated area of the wetland watershed in acres? **87**

B. What are the surrounding land uses?

LAND-USE	ESTIMATED % OF WETLAND WATERSHED
Developed (Industrial/Commercial/Residential)	48
Agricultural/cropland	--
Agricultural/grazing	--
Forested (Upland)	22
Grassed recreation areas/parks	--
Old field	--
Highways or roads	4
Other (specify) : Wetland	13

VI. SITE SKETCH

See attached aerial map exhibit

FUNCTIONAL ASSESSMENT

The following assessment requires the evaluator to examine site conditions that provide evidence that a given functional value is present and to assess the significance of the wetland to perform those functions. Positive answers to questions indicate the presence of factors important for the function. The questions are not definitive and are only provided to guide the evaluation. After completing each section, the evaluator should consider the factors observed and use best professional judgement to rate the significance. The ratings should be recorded on page 1 of the assessment.

SPECIAL FEATURES/"RED FLAGS"

1. ☒ **N** Is the wetland in or adjacent to an area of special natural resource interest (NR 103.04, Wis. Adm. Code)? If so, check those that apply:
 - ☐ Cold water community as defined in s. NR 102.04(3)(b), Wis. Adm. Code, including trout streams, their tributaries, and trout lakes
 - ☐ Lakes Michigan and Superior and the Mississippi River
 - ☐ State or federal designated wild and scenic river
 - ☐ Designated state riverway
 - ☐ Designated state scenic urban waterway
 - ☒ Environmentally sensitive area or environmental corridor identified in an area-wide water quality management plan, special area management plan, special wetland inventory study, or an advanced delineation and identification study – **Part of subject plant community area identified as a Natural Area of local significance (NA-3) known as the Pebble Creek Wetlands; contained entirely within a Primary environmental corridor; and ADID wetland**
 - ☐ Calcareous fen
 - ☐ State park, forest, trail or recreation area
 - ☐ State and federal fish and wildlife refuges and fish and wildlife management areas
 - ☐ State or federal designated wilderness area
 - ☐ Designated or dedicated state natural area
 - ☐ Wild rice water listed in ch. NR 19.09, Wis. Adm. Code
 - ☐ Surface water identified as an outstanding or exceptional resource water in ch. NR 102, Wis. Adm. Code
2. ☒ **N** According to the Natural Heritage Inventory (Bureau of Endangered Resources) or direct observations, are there any rare, endangered, or threatened plant or animal species in, near, or using the wetland or adjacent lands? If so, list the species of concern: **Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, observed by Commission staff at this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff upstream of this location. In addition, Natural Heritage Inventory (NHI) identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. This broad NHI finding is based upon an 1845 record for this species typically found in dry prairies. Accordingly, it is very unlikely that this plant community area would support this species.**
3. ☒ **N** Is the project located in an area that requires a State Coastal Zone Management Plan consistency determination?

Floral Diversity

1. ☒ **N** Does the wetland support a variety of native plant species (i.e. not a monotypic stand of cattail or giant reed grass and/or not dominated by exotic species such as reed canary grass, brome grass, buckthorn, purple loosestrife, etc.)?
2. ☒ **N** Is the wetland plant community regionally scarce or rare?

Wildlife and Fishery Habitat

1. List any species observed, evidenced (e.g. tracks, scat, nest/burrow, calls), or expected to utilize the wetland: **Raccoon and White-tailed deer; female Marsh hawk observed on a "kill" during the field inspection. Redwinged black bird, Green heron, and Gold finch also observed.**
2. ☒ **N** Does the wetland contain a number of diverse vegetative cover types and a high degree of interspersed of those vegetation types?

3. **Y(N)** Is the estimated ratio of open water to cover between 30 and 70 percent? What is the estimated ratio? **Outside of narrow, spring-fed ditch entering wetland, standing water is limited to early growing season.**
4. **Y(N)** Does the surrounding upland habitat likely support a variety of animal species?
Class I Wildlife Habitat
5. **Y(N)** Is the wetland part of or associated with a wildlife corridor or designated environmental corridor?
Class I Wildlife Habitat & Primary environmental corridor
6. **Y(N)** Is the surrounding habitat and/or the wetland itself a large tract of undeveloped land important for wildlife that requires large home ranges (e.g. bear, woodland passerines)?
7. **Y(N)** Is the surrounding habitat and/or the wetland itself a relatively large tract of undeveloped land within an urbanized environment that is important for wildlife?
8. **Y(N)** Are there other wetland areas near the subject wetland that may be important to wildlife?
Important wetlands for wildlife along the Pebble Creek corridor
9. **Y(N)** Is the wetland contiguous with a permanent waterbody or periodically inundated for sufficient periods of time to provide spawning/nursery habitat for fish? **This plant community area is located along the western edge of the Pebble Creek wetland complex that provides this function.**
10. **Y(N)** Can the wetland provide significant food base for fish and wildlife (e.g. insects, crustaceans, voles, forage fish, amphibians, reptiles, shrews, wild rice, wild celery, duckweed, pondweeds, watermeal, bulrushes, bur reeds, arrowhead, smartweeds, millets...)?
11. **Y(N)** Is the wetland located in a priority watershed/township as identified in the Upper Mississippi and Great Lakes Joint Venture of the North American Waterfowl Management Plan?
12. **Y(N)** Is the wetland providing habitat that is scarce to the region?

Flood and Stormwater Storage/Attenuation

1. **Y(N)** Are there steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within the watershed (circle those that apply)? **Impervious surfaces due to suburban development including subdivision roadways to west of wetland**
2. **Y(N)** Does the wetland significantly reduce run-off velocity due to its size, configuration, braided flow patterns, or vegetation type and density? **Runoff velocity is reduced when stormwater enters the subject wetland**
3. **Y(N)** Does the wetland show evidence of flashy water level responses to storm events (debris marks, erosion lines, stormwater inputs, channelized inflow)?
4. **Y(N)** Is there a natural feature or human-made structure impeding drainage from the wetland that causes backwater conditions?
5. **Y(N)** Considering the size of the wetland area in relation to the size of its watershed, at any time during the year is water likely to reach the wetland's storage capacity (i.e. the level of easily observable wetland vegetation)? [For some cases where greater documentation is required, one should determine if the wetland has capacity to hold 25% of the run-off from a 2 year-24 hour storm event.]
6. **Y(N)** Considering the location of the wetland in relation to the associated surface water watershed, is the wetland important for attenuating or storing flood or stormwater peaks (i.e. is the wetland located in the mid or lower reaches of the watershed)?

Water Quality Protection

1. ☒ **Y** ☐ **N** Does the wetland receive overland flow or direct discharge of stormwater as a primary source of water (circle that which applies)? **Largely groundwater fed with some discharge of stormwater from roadside ditches.**
2. ☒ **Y** ☐ **N** Do the surrounding land uses have the potential to deliver significant nutrient and/or sediment loads to the wetland? **Road salt from subdivision roads and nutrient loading from adjacent residential development**
3. ☒ **Y** ☐ **N** Based on your answers to the flood/stormwater section above, does the wetland perform significant flood/stormwater attenuation (residence time to allow settling)?
4. ☒ **Y** ☐ **N** Does the wetland have significant vegetative density to decrease water energy and allow settling of suspended materials?
5. ☒ **Y** ☐ **N** Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface water?
6. ☐ **Y** ☒ **N** Are algal blooms, heavy macrophyte growth, or other signs of excess nutrient loading to the wetland apparent (or historically reported)?

Shoreline Protection

1. ☒ **Y** ☐ **N** Is the wetland in a lake fringe or riverine setting? If NO, STOP and enter "not applicable" for this function. If YES, then answer the applicable questions. **This wetland plant community area is located along the western edge of a wetland complex associated with Pebble Creek.**
2. ☐ **Y** ☒ **N** Is the shoreline exposed to constant wave action caused by long wind fetch or boat traffic?
3. ☒ **Y** ☐ **N** Is the shoreline and shallow littoral zone vegetated with submerged or emergent vegetation in the swash zone that decrease wave energy or perennial wetland species that form dense root mats and/or species that have strong stems that are resistant to erosive forces? **This wetland plant community area is part of a wetland complex that provides this function.**
4. ☒ **Y** ☐ **N** Is the stream bank prone to erosion due to unstable soils, land uses, or ice floes? **This wetland plant community area is part of a wetland complex, the shoreline edge of which may experience ice flows.**
5. ☒ **Y** ☐ **N** Is the stream bank vegetated with densely rooted shrubs that provide upper bank stability? **This wetland plant community area is part of a wetland complex that provides this function.**

Groundwater Recharge and Discharge

1. ☒ **Y** ☐ **N** Related to discharge, are there observable (or reported) springs located in the wetland, physical indicators of springs such as marl soil, or vegetation indicators such as watercress or marsh marigold present that tend to indicate the presence of groundwater springs? **Springs reported and observed throughout Pebble Creek watershed. Specifically, Commission staff observed that part of this wetland may have been a peat mound at one time – an area where ground water wells up to the surface significantly slowing the decay of plant matter which forms a mound. Plants present which are indicators of groundwater discharge include Ciliated brome grass, Skunk cabbage, Water-cress, and Angelica.**
2. ☒ **Y** ☐ **N** Related to discharge, may the wetland contribute to the maintenance of base flow in a stream?
3. ☒ **Y** ☐ **N** Related to recharge, is the wetland located on or near a groundwater divide (e.g. a topographic high)? **A portion of Plant Community Area No. 4 is identified in SEWRPC Planning Report No. 52, A Regional Water Supply Plan for Southeastern Wisconsin, Volumes 1 and 2, as having a high groundwater recharge potential (See map).**

Aesthetics/Recreation/Education and Science

1. ☒ **Y** ☒ **N** Is the wetland visible from any of the following kinds of vantage points: roads, public lands, houses, and/or businesses? (Circle all that apply.) **Waukesha County park lands nearby.**
2. ☒ **Y** ☒ **N** Is the wetland in or near any population centers? **City of Waukesha**
3. ☒ **Y** ☒ **N** Is any part of the wetland in public or conservation ownership?
4. ☒ **Y** ☒ **N** Does the public have direct access to the wetland from public roads or waterways? (Circle those that apply.)
5. Is the wetland itself relatively free of obvious human influences, such as:
 - a. ☒ **Y** ☒ **N** Buildings?
 - b. ☒ **Y** ☒ **N** Roads?
 - c. ☒ **Y** ☒ **N** Other structures?
 - d. ☒ **Y** ☒ **N** Trash?
 - e. ☒ **Y** ☒ **N** Pollution?
 - f. ☒ **Y** ☒ **N** Filling?
 - g. ☒ **Y** ☒ **N** Dredging/drainage?
 - h. ☒ **Y** ☒ **N** Domination by non-native vegetation?
6. Is the surrounding viewshed relatively free of obvious human influences, such as:
 - a. ☒ **Y** ☒ **N** Buildings?
 - b. ☒ **Y** ☒ **N** Roads?
 - c. ☒ **Y** ☒ **N** Other structures?
7. ☒ **Y** ☒ **N** Is the wetland organized into a variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water)?
8. ☒ **Y** ☒ **N** Does the wetland add to the variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water) within the landscape as a whole?
9. Does the wetland encourage exploration because any of the following factors are present:
 - a. ☒ **Y** ☒ **N** Long views within the wetland?
 - b. ☒ **Y** ☒ **N** Long views in the viewshed adjacent to the wetland?
 - c. ☒ **Y** ☒ **N** Convolutional edges within and/or around the wetland border?
 - d. ☒ **Y** ☒ **N** The wetland provides a different (and perhaps more natural/complex) kind of environment from the surrounding land covers?
10. ☒ **Y** ☒ **N** Is the wetland currently being used for (or does it have the potential to be used for) the following recreational activities? (Check all that apply.) **This plant community area is entirely in private ownership.**

ACTIVITY	CURRENT USE	POTENTIAL USE
Nature study/photography		X
Hiking/biking/skiing		X
Hunting/fishing/trapping		X
Boating/canoeing		
Food harvesting		
Others (list)		

11. ☒ **Y** ☒ **N** Is the wetland currently being used, and/or does it have the potential for use for educational or scientific study purposes (circle that which applies)? **This plant community area is currently in private ownership. However, the potential is there for these activities.**

Wisconsin Department of Natural Resources

RAPID ASSESSMENT METHODOLOGY FOR EVALUATING WETLAND FUNCTIONAL VALUES

GENERAL INFORMATION

Name of Wetland: Plant Community Area No. 5
Owner(s): Leesley & Joan Hardy Trust – Tax Key No. WAKT1362995 Christine K. Whitstone – Tax Key No. WAKT1362981
Location: Waukesha County; NW ¼ Section 17, Township 6N, Range 19E
Project Name: Proposed Waukesha West Bypass
Evaluator(s): Donald M. Reed, PhD., Chief Biologist; Lawrence A. Leitner, PhD., Principal Biologist; Christopher J. Jors, Biologist, Southeastern Wisconsin Regional Planning Commission
Date(s) of Site Visit(s): August 4 and 25, 2011; January 12 and April 3, 2012

Description of seasonality limitations of this inspection due to time of year of the evaluation and/or current hydrologic and climatologic conditions (e.g. after heavy rains, snow or ice cover, during drought year, during spring flood, during bird migration): **Precipitation records in 2011 indicate normal to below normal precipitation (0 to -1 inches) for June, below normal (-1 to -2 inches) for July, and below normal (-2 to -3 inches) for August. Precipitation records for 2012 indicate normal precipitation (-0.5 to +0.5 inches) for February and slightly above normal (+0.5 to +1 inches) for March.**

WETLAND DESCRIPTION

Wisconsin Wetlands Inventory classification: None
Wetland Type: shallow open water deep marsh shallow marsh seasonally flooded basin bog floodplain forest alder thicket sedge meadow coniferous swamp fen wet meadow shrub-carr low prairie <u>hardwood swamp</u>
Estimated size of wetland in acres: Study area wetland = 0.3 acres

SUMMARY OF FUNCTIONAL VALUES

Based on the results of the attached functional assessment, rate the significance of each of the functional values for the subject wetland and check the appropriate box. Complete the table as a summary.

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	N/A
Floral Diversity	X				
Wildlife Habitat		X			
Fishery Habitat		X			
Flood/Stormwater Attenuation	X				
Water Quality Protection	X				
Shoreline Protection	X				
Groundwater		X			
Aesthetics/Recreation/Education	X				

List any Special Features/"Red Flags": **Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, observed by Commission staff in adjacent plant community area (PCA No. 4). Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by**

Retzer Nature Center staff northwest of this location. In addition, Natural Heritage Inventory (NHI) identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. See page 5 for details.

SITE DESCRIPTION

I. HYDROLOGIC SETTING

A. Describe the geomorphology of the wetland:

- ☒ Depressional (includes slopes, potholes, small lakes, kettles, etc.)
☐ Riverine
☐ Lake Fringe
☐ Extensive Peatland

B. **(Y)N** Has the wetland hydrology been altered by ditching tiles, dams culverts well pumping, diversion of surface flow or changes to runoff within the watershed (circle those that apply)?
Constructed pond immediately upstream of this wetland has impounded water (likely spring-fed); adjacent residential development including roadside ditches have diverted flows to subject wetland.

C. **(Y)N** Does the wetland have an inlet, outlet, or both (circle those that apply)?
Inlet from a drainage channel during high water levels from pond; outlet via drainage channel passing through wetland.

D. **(Y)N** Is there any field evidence of wetland hydrology such as buttressed tree trunks, adventitious roots, drift lines, water marks, water stained leaves, soil mottling, gleying, organic soils layer, or oxidized rhizospheres (circle those that apply)? **Soil saturation observed at surface as well as a water table at a depth of 17 inches below surface.**

E. **(Y)N** Does the wetland have standing water, and if so what is the average depth in inches? Approximately how much of the wetland is inundated?
No standing water observed during field inspection. However, parts of wetland likely inundated in early growing season.

F. How is the hydroperiod (seasonal water level pattern) of the wetland classified?

- ☐ Permanently Flooded
☒ Seasonally Flooded (water absent at end of growing season)
☐ Saturated (surface water seldom present)
☐ Artificially Flooded
☐ Artificially Drained

G. **(Y)N** Is the wetland a navigable body of water or is a portion of the wetland below the ordinary high-water mark of a navigable water body? List any surface waters associated with the wetland or in proximity to the wetland (note approximate distance from the wetland and navigability determination). Note if there is a surface water connection to other wetlands. **This plant community area portion of the wetland complex is not part of a navigable body of water. Nor is it below the Ordinary High Water Mark. However, this wetland plant community area is part of the larger Pebble Creek wetland complex and is approximately 1000 feet from the navigable portion of Pebble Creek.**

II. VEGETATION

A. Identify the vegetation communities present and the dominant species.

	floating leaved community dominated by:
	submerged aquatic community dominated by:
	emergent community dominated by:
	shrub community dominated by:
X	deciduous broad-leaved tree community dominated by: Populus tremuloides, Rhamnus cathartica, and Phalaris arundinacea. Quercus macrocarpa and Alliaria officinalis listed as sub-dominant species.
	coniferous tree community dominated by:
	open sphagnum mat or bog
	sedge meadow/wet prairie community dominated by:
	other (explain)

B. Other plant species identified during site visit:

See attached species list

III. SOILS

A. NRCS Soil Map Classification: **Lamartine silt loam (LmB) – Somewhat Poorly Drained, and Pistakee silt loam (PrA) – Somewhat Poorly Drained**

B. Field description: **Recorded August 25, 2011**

☒ Organic (histosol)? If so, is it a muck or a peat? **Muck**

☒ Mineral soil?

- **Mottling** gleying, sulfidic materials, **iron or manganese concretions**, organic streaking (circle those that apply)
- Soil Description: **See Below**
- Depth of mottling/gleying: **At Surface**
- Depth of A Horizon: **4 inches**
- Munsell Color of matrix and mottles
 - Matrix below the A horizon: **2.5Y 2.5/1**
 - Mottles: **7.5YR 3/4 Common/Prominent, 5YR 5/8 Common/Prominent & 7.5YR 4/6 Common/Prominent**

Depth (inches)	Matrix Color	Redox Concentrations Color	Redox Concentrations Abundance/Contrast	Texture
0-4	5Y 2.5/1	7.5YR 3/4	Common/Prominent	Muck
4-13	2.5Y 2.5/1	5YR 5/8 7.5YR 4/6	Common/Prominent Common/Prominent	Silty clay loam
13-23	N 2.5/0	--	--	Clay loam

V. SURROUNDING LAND USES

A. What is the estimated area of the wetland watershed in acres? 11

B. What are the surrounding land uses?

LAND-USE	ESTIMATED % OF WETLAND WATERSHED
Developed (Industrial/Commercial/Residential)	7.5
Agricultural/cropland	--
Agricultural/grazing	--
Forested (Upland)	2
Grassed recreation areas/parks	--
Old field	--
Highways or roads	1
Other (specify) : Wetland	0.5

VI. SITE SKETCH

See attached aerial map exhibit

FUNCTIONAL ASSESSMENT

The following assessment requires the evaluator to examine site conditions that provide evidence that a given functional value is present and to assess the significance of the wetland to perform those functions. Positive answers to questions indicate the presence of factors important for the function. The questions are not definitive and are only provided to guide the evaluation. After completing each section, the evaluator should consider the factors observed and use best professional judgement to rate the significance. The ratings should be recorded on page 1 of the assessment.

SPECIAL FEATURES/"RED FLAGS"

1. ☒ **Y** ☐ **N** Is the wetland in or adjacent to an area of special natural resource interest (NR 103.04, Wis. Adm. Code)? If so, check those that apply:
 - ☐ Cold water community as defined in s. NR 102.04(3)(b), Wis. Adm. Code, including trout streams, their tributaries, and trout lakes
 - ☐ Lakes Michigan and Superior and the Mississippi River
 - ☐ State or federal designated wild and scenic river
 - ☐ Designated state riverway
 - ☐ Designated state scenic urban waterway
 - ☒ Environmentally sensitive area or environmental corridor identified in an area-wide water quality management plan, special area management plan, special wetland inventory study, or an advanced delineation and identification study – **Contained entirely within a primary environmental corridor; and ADID wetland**
 - ☐ Calcareous fen
 - ☐ State park, forest, trail or recreation area
 - ☐ State and federal fish and wildlife refuges and fish and wildlife management areas
 - ☐ State or federal designated wilderness area
 - ☐ Designated or dedicated state natural area
 - ☐ Wild rice water listed in ch. NR 19.09, Wis. Adm. Code
 - ☐ Surface water identified as an outstanding or exceptional resource water in ch. NR 102, Wis. Adm. Code
2. ☒ **Y** ☐ **N** According to the Natural Heritage Inventory (Bureau of Endangered Resources) or direct observations, are there any rare, endangered, or threatened plant or animal species in, near, or using the wetland or adjacent lands? If so, list the species of concern: **Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, observed in adjacent plant community area. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff northwest of this location. In addition, Natural Heritage Inventory (NHI) identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. This broad NHI finding is based upon an 1845 record for this species typically found in dry prairies. Accordingly, it is very unlikely that this plant community area would support this species.**
3. ☐ **Y** ☒ **N** Is the project located in an area that requires a State Coastal Zone Management Plan consistency determination?

Floral Diversity

1. ☒ **Y** ☐ **N** Does the wetland support a variety of native plant species (i.e. not a monotypic stand of cattail or giant reed grass and/or not dominated by exotic species such as reed canary grass, brome grass, buckthorn, purple loosestrife, etc.)?
2. ☐ **Y** ☒ **N** Is the wetland plant community regionally scarce or rare?

Wildlife and Fishery Habitat

1. List any species observed, evidenced (e.g. tracks, scat, nest/burrow, calls), or expected to utilize the wetland: **Raccoon, White-tailed deer, and passerine birds utilize this wetland complex.**
2. ☒ **Y** ☐ **N** Does the wetland contain a number of diverse vegetative cover types and a high degree of interspersed of those vegetation types? **Yes, when considering the larger wetland complex that this plant community area is part of.**

3. ☒ ☐ Is the estimated ratio of open water to cover between 30 and 70 percent? What is the estimated ratio? **Outside of a narrow intermittent drainage way passing through this sloped wetland, standing water not present.**
4. ☒ ☐ Does the surrounding upland habitat likely support a variety of animal species?
Class II Wildlife Habitat
5. ☒ ☐ Is the wetland part of or associated with a wildlife corridor or designated environmental corridor?
Class II Wildlife Habitat & Primary environmental corridor
6. ☒ ☐ Is the surrounding habitat and/or the wetland itself a large tract of undeveloped land important for wildlife that requires large home ranges (e.g. bear, woodland passerines)?
7. ☒ ☐ Is the surrounding habitat and/or the wetland itself a relatively large tract of undeveloped land within an urbanized environment that is important for wildlife?
8. ☒ ☐ Are there other wetland areas near the subject wetland that may be important to wildlife?
Important wetlands for wildlife along the Pebble Creek corridor
9. ☒ ☐ Is the wetland contiguous with a permanent waterbody or periodically inundated for sufficient periods of time to provide spawning/nursery habitat for fish? **This plant community area is located along the western edge of the Pebble Creek wetland complex that provides this function.**
10. ☒ ☐ Can the wetland provide significant food base for fish and wildlife (e.g. insects, crustaceans, voles, forage fish, amphibians, reptiles, shrews, wild rice, wild celery, duckweed, pondweeds, watermeal, bulrushes, bur reeds, arrowhead, smartweeds, millets...)?
11. ☒ ☐ Is the wetland located in a priority watershed/township as identified in the Upper Mississippi and Great Lakes Joint Venture of the North American Waterfowl Management Plan?
12. ☒ ☐ Is the wetland providing habitat that is scarce to the region?

Flood and Stormwater Storage/Attenuation

1. ☒ ☐ Are there steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within the watershed (circle those that apply)? **Impervious surfaces due to suburban development including subdivision roadways**
2. ☒ ☐ Does the wetland significantly reduce run-off velocity due to its size, configuration, braided flow patterns, or vegetation type and density? **Runoff velocity is reduced by upstream pond impoundment to west of subject plant community area.**
3. ☒ ☐ Does the wetland show evidence of flashy water level responses to storm events (debris marks, erosion lines, stormwater inputs, channelized inflow)? **Likely that upstream pond intercepts much of stormwater and releases it slowly unless a significant storm event occurs.**
4. ☒ ☐ Is there a natural feature or human-made structure impeding drainage from the wetland that causes backwater conditions? **Upstream pond impedes drainage to the wetland**
5. ☒ ☐ Considering the size of the wetland area in relation to the size of its watershed, at any time during the year is water likely to reach the wetland's storage capacity (i.e. the level of easily observable wetland vegetation)? [For some cases where greater documentation is required, one should determine if the wetland has capacity to hold 25% of the run-off from a 2 year-24 hour storm event.]
6. ☒ ☐ Considering the location of the wetland in relation to the associated surface water watershed, is the wetland important for attenuating or storing flood or stormwater peaks (i.e. is the wetland located in the mid or lower reaches of the watershed)?

Water Quality Protection

1. ☒ **Y** ☐ **N** Does the wetland receive overland flow or direct discharge of stormwater as a primary source of water (circle that which applies)? **Discharge of stormwater from upstream pond via a drainage channel**
2. ☒ **Y** ☐ **N** Do the surrounding land uses have the potential to deliver significant nutrient and/or sediment loads to the wetland? **Road salt from subdivision roads and nutrient loading from adjacent residential development**
3. ☐ **Y** ☒ **N** Based on your answers to the flood/stormwater section above, does the wetland perform significant flood/stormwater attenuation (residence time to allow settling)? **Largely handled by upstream pond.**
4. ☐ **Y** ☒ **N** Does the wetland have significant vegetative density to decrease water energy and allow settling of suspended materials? **Sloped wetland**
5. ☐ **Y** ☒ **N** Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface water?
6. ☐ **Y** ☒ **N** Are algal blooms, heavy macrophyte growth, or other signs of excess nutrient loading to the wetland apparent (or historically reported)?

Shoreline Protection

1. ☒ **Y** ☐ **N** Is the wetland in a lake fringe or riverine setting? If NO, STOP and enter "not applicable" for this function. If YES, then answer the applicable questions. **This wetland plant community area is located along the western edge of a wetland complex associated with Pebble Creek.**
2. ☐ **Y** ☒ **N** Is the shoreline exposed to constant wave action caused by long wind fetch or boat traffic?
3. ☒ **Y** ☐ **N** Is the shoreline and shallow littoral zone vegetated with submerged or emergent vegetation in the swash zone that decrease wave energy or perennial wetland species that form dense root mats and/or species that have strong stems that are resistant to erosive forces? **This wetland plant community area is part of a wetland complex that provides this function.**
4. ☒ **Y** ☐ **N** Is the stream bank prone to erosion due to unstable soils, land uses, or ice floes? **This wetland plant community area is part of a wetland complex, the shoreline edge of which may experience ice flows.**
5. ☒ **Y** ☐ **N** Is the stream bank vegetated with densely rooted shrubs that provide upper bank stability? **This wetland plant community area is part of a wetland complex that provides this function.**

Groundwater Recharge and Discharge

1. ☐ **Y** ☒ **N** Related to discharge, are there observable (or reported) springs located in the wetland, physical indicators of springs such as marl soil, or vegetation indicators such as watercress or marsh marigold present that tend to indicate the presence of groundwater springs? **No evidence observed in immediate plant community area, although adjacent pond is likely groundwater fed.**
2. ☐ **Y** ☒ **N** Related to discharge, may the wetland contribute to the maintenance of base flow in a stream?
3. ☒ **Y** ☐ **N** Related to recharge, is the wetland located on or near a groundwater divide (e.g. a topographic high)? **A portion of Plant Community Area No. 5 is identified in SEWRPC Planning Report No. 52, A Regional Water Supply Plan for Southeastern Wisconsin, Volumes 1 and 2, as having a high groundwater recharge potential (See map).**

Aesthetics/Recreation/Education and Science

1. ☒ **Y** ☒ **N** Is the wetland visible from any of the following kinds of vantage points: roads, public lands, houses, and/or businesses? (Circle all that apply.)
2. ☒ **Y** ☒ **N** Is the wetland in or near any population centers? **City of Waukesha**
3. ☒ **Y** ☒ **N** Is any part of the wetland in public or conservation ownership?
4. ☒ **Y** ☒ **N** Does the public have direct access to the wetland from public roads or waterways? (Circle those that apply.)
5. Is the wetland itself relatively free of obvious human influences, such as:
 - a. ☒ **Y** ☒ **N** Buildings?
 - b. ☒ **Y** ☒ **N** Roads?
 - c. ☒ **Y** ☒ **N** Other structures?
 - d. ☒ **Y** ☒ **N** Trash?
 - e. ☒ **Y** ☒ **N** Pollution?
 - f. ☒ **Y** ☒ **N** Filling?
 - g. ☒ **Y** ☒ **N** Dredging/drainage?
 - h. ☒ **Y** ☒ **N** Domination by non-native vegetation?
6. Is the surrounding viewshed relatively free of obvious human influences, such as:
 - a. ☒ **Y** ☒ **N** Buildings?
 - b. ☒ **Y** ☒ **N** Roads?
 - c. ☒ **Y** ☒ **N** Other structures?
7. ☒ **Y** ☒ **N** Is the wetland organized into a variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water)?
8. ☒ **Y** ☒ **N** Does the wetland add to the variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water) within the landscape as a whole?
9. Does the wetland encourage exploration because any of the following factors are present:
 - a. ☒ **Y** ☒ **N** Long views within the wetland?
 - b. ☒ **Y** ☒ **N** Long views in the viewshed adjacent to the wetland?
 - c. ☒ **Y** ☒ **N** Convolutional edges within and/or around the wetland border?
 - d. ☒ **Y** ☒ **N** The wetland provides a different (and perhaps more natural/complex) kind of environment from the surrounding land covers?
10. ☒ **Y** ☒ **N** Is the wetland currently being used for (or does it have the potential to be used for) the following recreational activities? (Check all that apply.) **This plant community area is entirely in private ownership.**

ACTIVITY	CURRENT USE	POTENTIAL USE
Nature study/photography		X
Hiking/biking/skiing		X
Hunting/fishing/trapping		X
Boating/canoeing		
Food harvesting		
Others (list)		

11. ☒ **Y** ☒ **N** Is the wetland currently being used, and/or does it have the potential for use for educational or scientific study purposes (circle that which applies)? **This plant community area is currently in private ownership. However, the potential is there for such activity.**

Wisconsin Department of Natural Resources

RAPID ASSESSMENT METHODOLOGY FOR EVALUATING WETLAND FUNCTIONAL VALUES

GENERAL INFORMATION

Name of Wetland: Plant Community Area No. 6
Owner(s): Leesley B. & Joan J. Hardy Living Trust – Tax Key No. WAKT1362999003
Location: Waukesha County; NW ¼ Section 17, Township 6N, Range 19E
Project Name: Proposed Waukesha West Bypass
Evaluator(s): Donald M. Reed, PhD., Chief Biologist; Lawrence A. Leitner, PhD., Principal Biologist; Christopher J. Jors, Biologist, Southeastern Wisconsin Regional Planning Commission
Date(s) of Site Visit(s): August 4, 2011

Description of seasonality limitations of this inspection due to time of year of the evaluation and/or current hydrologic and climatologic conditions (e.g. after heavy rains, snow or ice cover, during drought year, during spring flood, during bird migration): **Precipitation records in 2011 indicate normal to below normal precipitation (0 to -1 inches) for June, below normal (-1 to -2 inches) for July, and below normal (-2 to -3 inches) for August.**

WETLAND DESCRIPTION

Wisconsin Wetlands Inventory classification: None
Wetland Type: shallow open water deep marsh shallow marsh seasonally flooded basin bog floodplain forest alder thicket sedge meadow coniferous swamp fen wet meadow shrub-carr low prairie <u>hardwood swamp</u>
Estimated size of wetland in acres: Study area wetland = 0.1 acres

SUMMARY OF FUNCTIONAL VALUES

Based on the results of the attached functional assessment, rate the significance of each of the functional values for the subject wetland and check the appropriate box. Complete the table as a summary.

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	N/A
Floral Diversity	X				
Wildlife Habitat		X			
Fishery Habitat					X
Flood/Stormwater Attenuation	X				
Water Quality Protection	X				
Shoreline Protection					X
Groundwater		X			
Aesthetics/Recreation/Education	X				

List any Special Features/"Red Flags": **Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, observed by Commission staff in plant community area southeast of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff northwest of this location. In addition, Natural Heritage Inventory (NHI) identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough**

rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. See page 5 for details.

SITE DESCRIPTION

I. HYDROLOGIC SETTING

A. Describe the geomorphology of the wetland:

- ☒ Depressional (includes slopes, potholes, small lakes, kettles, etc.)
☐ Riverine
☐ Lake Fringe
☐ Extensive Peatland

B. **Y**(**N**) Has the wetland hydrology been altered by ditching, tiles, dams, culverts, well pumping, diversion of surface flow, or changes to runoff within the watershed (circle those that apply)?

C. **Y**(**N**) Does the wetland have an inlet, outlet, or both (circle those that apply)?
Inlet from an intermittent drainage channel & outlet via drainage channel passing through wetland.

D. **Y**(**N**) Is there any field evidence of wetland hydrology such as buttressed tree trunks, adventitious roots, drift lines, water marks, water stained leaves, soil mottling/gleying, organic soils layer, or oxidized rhizospheres (circle those that apply)? **Drainage patterns.**

E. **Y**(**N**) Does the wetland have standing water, and if so what is the average depth in inches? Approximately how much of the wetland is inundated?
No standing water observed during field inspection. However, parts of wetland may be inundated in early growing season.

F. How is the hydroperiod (seasonal water level pattern) of the wetland classified?

- ☐ Permanently Flooded
☒ Seasonally Flooded (water absent at end of growing season)
☐ Saturated (surface water seldom present)
☐ Artificially Flooded
☐ Artificially Drained

G. **Y**(**N**) Is the wetland a navigable body of water or is a portion of the wetland below the ordinary high-water mark of a navigable water body? List any surface waters associated with the wetland or in proximity to the wetland (note approximate distance from the wetland and navigability determination). Note if there is a surface water connection to other wetlands.

II. VEGETATION

A. Identify the vegetation communities present and the dominant species.

	floating leaved community dominated by:
	submerged aquatic community dominated by:
	emergent community dominated by:
	shrub community dominated by:
X	deciduous broad-leaved tree community dominated by: Fraxinus pennsylvanica and Pilea pumila.
	coniferous tree community dominated by:
	open sphagnum mat or bog
	sedge meadow/wet prairie community dominated by:
	other (explain)

B. Other plant species identified during site visit:

See attached species list

III. SOILS

A. NRCS Soil Map Classification: **No hydric soils identified by NRCS – would likely qualify as a hydric inclusion in a larger upland soil unit.**

B. Field description: **None recorded**

☐ Organic (histosol)? If so, is it a muck or a peat?

☐ Mineral soil?

- Mottling, gleying, sulfidic materials, iron or manganese concretions, organic streaking (circle those that apply)
- Soil Description:
- Depth of mottling/gleying:
- Depth of A Horizon:
- Munsell Color of matrix and mottles
 - Matrix below the A horizon:
 - Mottles:

V. SURROUNDING LAND USES

A. What is the estimated area of the wetland watershed in acres? **17**

B. What are the surrounding land uses?

LAND-USE	ESTIMATED % OF WETLAND WATERSHED
Developed (Industrial/Commercial/Residential)	3
Agricultural/cropland	--
Agricultural/grazing	--
Forested (Upland)	13
Grassed recreation areas/parks	--
Old field	--
Highways or roads	0.5
Other (specify) : Wetland	0.5

VI. SITE SKETCH

See attached aerial map exhibit

FUNCTIONAL ASSESSMENT

The following assessment requires the evaluator to examine site conditions that provide evidence that a given functional value is present and to assess the significance of the wetland to perform those functions. Positive answers to questions indicate the presence of factors important for the function. The questions are not definitive and are only provided to guide the evaluation. After completing each section, the evaluator should consider the factors observed and use best professional judgement to rate the significance. The ratings should be recorded on page 1 of the assessment.

SPECIAL FEATURES/"RED FLAGS"

1. ☒ **Y** ☐ **N** Is the wetland in or adjacent to an area of special natural resource interest (NR 103.04, Wis. Adm. Code)? If so, check those that apply:
 - ☐ Cold water community as defined in s. NR 102.04(3)(b), Wis. Adm. Code, including trout streams, their tributaries, and trout lakes
 - ☐ Lakes Michigan and Superior and the Mississippi River
 - ☐ State or federal designated wild and scenic river
 - ☐ Designated state riverway
 - ☐ Designated state scenic urban waterway
 - ☒ Environmentally sensitive area or environmental corridor identified in an area-wide water quality management plan, special area management plan, special wetland inventory study, or an advanced delineation and identification study – **Contained entirely within a primary environmental corridor**
 - ☐ Calcareous fen
 - ☐ State park, forest, trail or recreation area
 - ☐ State and federal fish and wildlife refuges and fish and wildlife management areas
 - ☐ State or federal designated wilderness area
 - ☐ Designated or dedicated state natural area
 - ☐ Wild rice water listed in ch. NR 19.09, Wis. Adm. Code
 - ☐ Surface water identified as an outstanding or exceptional resource water in ch. NR 102, Wis. Adm. Code
2. ☒ **Y** ☐ **N** According to the Natural Heritage Inventory (Bureau of Endangered Resources) or direct observations, are there any rare, endangered, or threatened plant or animal species in, near, or using the wetland or adjacent lands? If so, list the species of concern: **Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, observed in plant community area southeast of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff northwest of this location. In addition, Natural Heritage Inventory (NHI) identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. This broad NHI finding is based upon an 1845 record for this species typically found in dry prairies. Accordingly, it is very unlikely that this plant community area would support this species.**
3. ☐ **Y** ☒ **N** Is the project located in an area that requires a State Coastal Zone Management Plan consistency determination?

Floral Diversity

1. ☒ **Y** ☐ **N** Does the wetland support a variety of native plant species (i.e. not a monotypic stand of cattail or giant reed grass and/or not dominated by exotic species such as reed canary grass, brome grass, buckthorn, purple loosestrife, etc.)?
2. ☐ **Y** ☒ **N** Is the wetland plant community regionally scarce or rare?

Wildlife and Fishery Habitat

1. List any species observed, evidenced (e.g. tracks, scat, nest/burrow, calls), or expected to utilize the wetland: **Raccoon and White-tailed deer, passerine bird usage.**
2. ☐ **Y** ☒ **N** Does the wetland contain a number of diverse vegetative cover types and a high degree of interspersed of those vegetation types?
3. ☐ **Y** ☒ **N** Is the estimated ratio of open water to cover between 30 and 70 percent? What is the estimated ratio? **Outside of intermittent drainage way passing through this sloped wetland, standing water not present.**

4. ☒ ☐ Does the surrounding upland habitat likely support a variety of animal species?
Class II Wildlife Habitat
5. ☒ ☐ Is the wetland part of or associated with a wildlife corridor or designated environmental corridor?
Class II Wildlife Habitat & Primary environmental corridor
6. ☒ ☐ Is the surrounding habitat and/or the wetland itself a large tract of undeveloped land important for wildlife that requires large home ranges (e.g. bear, woodland passerines)?
7. ☒ ☐ Is the surrounding habitat and/or the wetland itself a relatively large tract of undeveloped land within an urbanized environment that is important for wildlife?
8. ☒ ☐ Are there other wetland areas near the subject wetland that may be important to wildlife?
Important wetlands for wildlife along the Pebble Creek corridor
9. ☒ ☐ Is the wetland contiguous with a permanent waterbody or periodically inundated for sufficient periods of time to provide spawning/nursery habitat for fish?
10. ☒ ☐ Can the wetland provide significant food base for fish and wildlife (e.g. insects, crustaceans, voles, forage fish, amphibians, reptiles, shrews, wild rice, wild celery, duckweed, pondweeds, watermeal, bulrushes, bur reeds, arrowhead, smartweeds, millets...)?
11. ☒ ☐ Is the wetland located in a priority watershed/township as identified in the Upper Mississippi and Great Lakes Joint Venture of the North American Waterfowl Management Plan?
12. ☒ ☐ Is the wetland providing habitat that is scarce to the region?

Flood and Stormwater Storage/Attenuation

1. ☒ ☐ Are there steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within the watershed (circle those that apply)?
2. ☒ ☐ Does the wetland significantly reduce run-off velocity due to its size, configuration, braided flow patterns, or vegetation type and density?
3. ☒ ☐ Does the wetland show evidence of flashy water level responses to storm events (debris marks, erosion lines, stormwater inputs, channelized inflow)? **Erosion evident along drainage channel**
4. ☒ ☐ Is there a natural feature or human-made structure impeding drainage from the wetland that causes backwater conditions?
5. ☒ ☐ Considering the size of the wetland area in relation to the size of its watershed, at any time during the year is water likely to reach the wetland's storage capacity (i.e. the level of easily observable wetland vegetation)? [For some cases where greater documentation is required, one should determine if the wetland has capacity to hold 25% of the run-off from a 2 year-24 hour storm event.]
6. ☒ ☐ Considering the location of the wetland in relation to the associated surface water watershed, is the wetland important for attenuating or storing flood or stormwater peaks (i.e. is the wetland located in the mid or lower reaches of the watershed)?

Water Quality Protection

1. ☒ ☐ Does the wetland receive overland flow or direct discharge of stormwater as a primary source of water (circle that which applies)? **Discharge of stormwater from via intermittent drainage channel**
2. ☒ ☐ Do the surrounding land uses have the potential to deliver significant nutrient and/or sediment loads to the wetland?

3. ☒ **N** Based on your answers to the flood/stormwater section above, does the wetland perform significant flood/stormwater attenuation (residence time to allow settling)?
4. ☒ **N** Does the wetland have significant vegetative density to decrease water energy and allow settling of suspended materials?
5. ☒ **N** Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface water?
6. ☒ **N** Are algal blooms, heavy macrophyte growth, or other signs of excess nutrient loading to the wetland apparent (or historically reported)?

Shoreline Protection

1. ☒ **N** Is the wetland in a lake fringe or riverine setting? If NO, STOP and enter "not applicable" for this function. If YES, then answer the applicable questions.
2. **Y N** Is the shoreline exposed to constant wave action caused by long wind fetch or boat traffic?
3. **Y N** Is the shoreline and shallow littoral zone vegetated with submerged or emergent vegetation in the swash zone that decrease wave energy or perennial wetland species that form dense root mats and/or species that have strong stems that are resistant to erosive forces?
4. **Y N** Is the stream bank prone to erosion due to unstable soils, land uses, or ice floes?
5. **Y N** Is the stream bank vegetated with densely rooted shrubs that provide upper bank stability?

Groundwater Recharge and Discharge

1. ☒ **N** Related to discharge, are there observable (or reported) springs located in the wetland, physical indicators of springs such as marl soil, or vegetation indicators such as watercress or marsh marigold present that tend to indicate the presence of groundwater springs?
2. ☒ **N** Related to discharge, may the wetland contribute to the maintenance of base flow in a stream?
3. ☒ **N** Related to recharge, is the wetland located on or near a groundwater divide (e.g. a topographic high)? **Plant Community Area No. 6 is contained in an area identified in SEWRPC Planning Report No. 52, A Regional Water Supply Plan for Southeastern Wisconsin, Volumes 1 and 2, as having a high groundwater recharge potential (See map).**

Aesthetics/Recreation/Education and Science

1. ☒ **N** Is the wetland visible from any of the following kinds of vantage points: roads, public lands, houses, and/or businesses? (Circle all that apply.)
2. ☒ **Y N** Is the wetland in or near any population centers? **City of Waukesha**
3. ☒ **N** Is any part of the wetland in public or conservation ownership?
4. ☒ **N** Does the public have direct access to the wetland from public roads or waterways? (Circle those that apply.)

5. Is the wetland itself relatively free of obvious human influences, such as:

- a. ☒ Y ☒ N Buildings? e. ☒ Y ☒ N Pollution?
b. ☒ Y ☒ N Roads? f. ☒ Y ☒ N Filling?
c. ☒ Y ☒ N Other structures? g. ☒ Y ☒ N Dredging/drainage?
d. ☒ Y ☒ N Trash? h. ☒ Y ☒ N Domination by non-native vegetation?

6. Is the surrounding viewshed relatively free of obvious human influences, such as:

- a. ☒ Y ☒ N Buildings?
b. ☒ Y ☒ N Roads?
c. ☒ Y ☒ N Other structures?

7. ☒ Y ☒ N Is the wetland organized into a variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water)?

8. ☒ Y ☒ N Does the wetland add to the variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water) within the landscape as a whole?

9. Does the wetland encourage exploration because any of the following factors are present:

- a. ☒ Y ☒ N Long views within the wetland?
b. ☒ Y ☒ N Long views in the viewshed adjacent to the wetland?
c. ☒ Y ☒ N Convoluted edges within and/or around the wetland border?
d. ☒ Y ☒ N The wetland provides a different (and perhaps more natural/complex) kind of environment

from the surrounding land covers?

10. ☒ Y ☒ N Is the wetland currently being used for (or does it have the potential to be used for) the following recreational activities? (Check all that apply.) **This plant community area is entirely in private ownership**

ACTIVITY	CURRENT USE	POTENTIAL USE
Nature study/photography		X
Hiking/biking/skiing		X
Hunting/fishing/trapping		X
Boating/canoeing		
Food harvesting		
Others (list)		

11. ☒ Y ☒ N Is the wetland currently being used, and/or does it have the potential for use for educational or scientific study purposes (circle that which applies)? **This plant community area is currently in private ownership. However, the potential is there for such activity.**

Wisconsin Department of Natural Resources

RAPID ASSESSMENT METHODOLOGY FOR EVALUATING WETLAND FUNCTIONAL VALUES

GENERAL INFORMATION

Name of Wetland: Plant Community Area No. 7
Owner(s): Leesley B. & Joan J. Hardy Living Trust – Tax Key No. WAKT1362999003
Location: Waukesha County; NW ¼ Section 17, Township 6N, Range 19E
Project Name: Proposed Waukesha West Bypass
Evaluator(s): Donald M. Reed, PhD., Chief Biologist; Lawrence A. Leitner, PhD., Principal Biologist; Christopher J. Jors, Biologist, Southeastern Wisconsin Regional Planning Commission
Date(s) of Site Visit(s): August 4, 2011

Description of seasonality limitations of this inspection due to time of year of the evaluation and/or current hydrologic and climatologic conditions (e.g. after heavy rains, snow or ice cover, during drought year, during spring flood, during bird migration): **Precipitation records in 2011 indicate normal to below normal precipitation (0 to -1 inches) for June, below normal (-1 to -2 inches) for July, and below normal (-2 to -3 inches) for August.**

WETLAND DESCRIPTION

Wisconsin Wetlands Inventory classification: None
Wetland Type: shallow open water deep marsh shallow marsh seasonally flooded basin bog floodplain forest alder thicket sedge meadow coniferous swamp fen <u>wet meadow</u> <u>shrub-carr</u> low prairie <u>hardwood swamp</u>
Estimated size of wetland in acres: Study area wetland = 0.8 acres

SUMMARY OF FUNCTIONAL VALUES

Based on the results of the attached functional assessment, rate the significance of each of the functional values for the subject wetland and check the appropriate box. Complete the table as a summary.

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	N/A
Floral Diversity		X			
Wildlife Habitat		X			
Fishery Habitat		X			
Flood/Stormwater Attenuation	X				
Water Quality Protection		X			
Shoreline Protection	X				
Groundwater			X		
Aesthetics/Recreation/Education	X				

List any Special Features/"Red Flags": **Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, observed by Commission staff in plant community area southeast of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff northwest of this location. In addition, Natural Heritage Inventory (NHI) identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough**

rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. See page 5 for details.

SITE DESCRIPTION

I. HYDROLOGIC SETTING

A. Describe the geomorphology of the wetland:

- ☒ Depressional (includes slopes, potholes, small lakes, kettles, etc.)
- ☐ Riverine
- ☐ Lake Fringe
- ☐ Extensive Peatland

B. **Y(N)** Has the wetland hydrology been altered by ditching, tiles, dams, culverts, well pumping, diversion of surface flow, or changes to runoff within the watershed (circle those that apply)?

C. **Y(N)** Does the wetland have an inlet, outlet, or both (circle those that apply)?

D. **Y(N)** Is there any field evidence of wetland hydrology such as buttressed tree trunks, adventitious roots, drift lines, water marks, water stained leaves, soil mottling/gleying, organic soils layer, or oxidized rhizospheres (circle those that apply)? **Groundwater seepage evident during field inspection.**

E. **Y(N)** Does the wetland have standing water, and if so what is the average depth in inches? Approximately how much of the wetland is inundated?
No standing water observed during field inspection. However, large portions of subject wetland with soils saturated at surface.

F. How is the hydroperiod (seasonal water level pattern) of the wetland classified?

- ☐ Permanently Flooded
- ☐ Seasonally Flooded (water absent at end of growing season)
- ☒ Saturated (surface water seldom present)
- ☐ Artificially Flooded
- ☐ Artificially Drained

G. **Y(N)** Is the wetland a navigable body of water or is a portion of the wetland below the ordinary high-water mark of a navigable water body? List any surface waters associated with the wetland or in proximity to the wetland (note approximate distance from the wetland and navigability determination). Note if there is a surface water connection to other wetlands. **This plant community area portion of the wetland complex is not part of a navigable body of water. Nor is it below the Ordinary High Water Mark. However, this wetland is part of the larger Pebble Creek wetland complex and is approximately 1000 feet from the navigable portion of Pebble Creek.**

II. VEGETATION

A. Identify the vegetation communities present and the dominant species.

	floating leaved community dominated by:
	submerged aquatic community dominated by:
X	emergent community dominated by: Phalaris arundinacea
X	shrub community dominated by: Salix interior
X	deciduous broad-leaved tree community dominated by: Impatiens capensis; various tree species recorded, none of which was dominant
	coniferous tree community dominated by:
	open sphagnum mat or bog
	sedge meadow/wet prairie community dominated by:
	other (explain)

B. Other plant species identified during site visit:

See attached species list

III. SOILS

A. NRCS Soil Map Classification: **Lamartine silt loam (LmB) – Somewhat Poorly Drained**

B. Field description: **None recorded**

☐ Organic (histosol)? If so, is it a muck or a peat?

☐ Mineral soil?

- Mottling, gleying, sulfidic materials, iron or manganese concretions, organic streaking (circle those that apply)
- Soil Description:
- Depth of mottling/gleying:
- Depth of A Horizon:
- Munsell Color of matrix and mottles
 - Matrix below the A horizon:
 - Mottles:

V. SURROUNDING LAND USES

A. What is the estimated area of the wetland watershed in acres? **11**

B. What are the surrounding land uses?

LAND-USE	ESTIMATED % OF WETLAND WATERSHED
Developed (Industrial/Commercial/Residential)	1.5
Agricultural/cropland	--
Agricultural/grazing	--
Forested (Upland)	8.5
Grassed recreation areas/parks	--
Old field	--
Highways or roads	--
Other (specify) : Wetland	1

VI. SITE SKETCH

See attached aerial map exhibit

FUNCTIONAL ASSESSMENT

The following assessment requires the evaluator to examine site conditions that provide evidence that a given functional value is present and to assess the significance of the wetland to perform those functions. Positive answers to questions indicate the presence of factors important for the function. The questions are not definitive and are only provided to guide the evaluation. After completing each section, the evaluator should consider the factors observed and use best professional judgement to rate the significance. The ratings should be recorded on page 1 of the assessment.

SPECIAL FEATURES/"RED FLAGS"

1. ☒ **Y** ☐ **N** Is the wetland in or adjacent to an area of special natural resource interest (NR 103.04, Wis. Adm. Code)? If so, check those that apply:
 - ☐ Cold water community as defined in s. NR 102.04(3)(b), Wis. Adm. Code, including trout streams, their tributaries, and trout lakes
 - ☐ Lakes Michigan and Superior and the Mississippi River
 - ☐ State or federal designated wild and scenic river
 - ☐ Designated state riverway
 - ☐ Designated state scenic urban waterway
 - ☒ Environmentally sensitive area or environmental corridor identified in an area-wide water quality management plan, special area management plan, special wetland inventory study, or an advanced delineation and identification study – **Contained entirely within a primary environmental corridor**
 - ☐ Calcareous fen
 - ☐ State park, forest, trail or recreation area
 - ☐ State and federal fish and wildlife refuges and fish and wildlife management areas
 - ☐ State or federal designated wilderness area
 - ☐ Designated or dedicated state natural area
 - ☐ Wild rice water listed in ch. NR 19.09, Wis. Adm. Code
 - ☐ Surface water identified as an outstanding or exceptional resource water in ch. NR 102, Wis. Adm. Code
2. ☒ **Y** ☐ **N** According to the Natural Heritage Inventory (Bureau of Endangered Resources) or direct observations, are there any rare, endangered, or threatened plant or animal species in, near, or using the wetland or adjacent lands? If so, list the species of concern: **Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, observed in plant community area southeast of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff northwest of this location. In addition, Natural Heritage Inventory (NHI) identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. This broad NHI finding is based upon an 1845 record for this species typically found in dry prairies. Accordingly, it is very unlikely that this plant community area would support this species.**
3. ☐ **Y** ☒ **N** Is the project located in an area that requires a State Coastal Zone Management Plan consistency determination?

Floral Diversity

1. ☒ **Y** ☐ **N** Does the wetland support a variety of native plant species (i.e. not a monotypic stand of cattail or giant reed grass and/or not dominated by exotic species such as reed canary grass, brome grass, buckthorn, purple loosestrife, etc.)?
2. ☐ **Y** ☒ **N** Is the wetland plant community regionally scarce or rare?

Wildlife and Fishery Habitat

1. List any species observed, evidenced (e.g. tracks, scat, nest/burrow, calls), or expected to utilize the wetland: **Raccoon, White-tailed deer, and passerine birds use this area.**
2. ☒ **Y** ☐ **N** Does the wetland contain a number of diverse vegetative cover types and a high degree of interspersed of those vegetation types?
3. ☐ **Y** ☒ **N** Is the estimated ratio of open water to cover between 30 and 70 percent? What is the estimated ratio? **Lower portions of wetland may have standing water early in growing season.**

4. ☒ **Y** ☐ **N** Does the surrounding upland habitat likely support a variety of animal species?
Class II Wildlife Habitat
5. ☒ **Y** ☐ **N** Is the wetland part of or associated with a wildlife corridor or designated environmental corridor?
Class II Wildlife Habitat & Primary environmental corridor
6. ☒ **Y** ☐ **N** Is the surrounding habitat and/or the wetland itself a large tract of undeveloped land important for wildlife that requires large home ranges (e.g. bear, woodland passerines)?
7. ☒ **Y** ☐ **N** Is the surrounding habitat and/or the wetland itself a relatively large tract of undeveloped land within an urbanized environment that is important for wildlife?
8. ☒ **Y** ☐ **N** Are there other wetland areas near the subject wetland that may be important to wildlife?
Important wetlands for wildlife along the Pebble Creek corridor
9. ☒ **Y** ☐ **N** Is the wetland contiguous with a permanent waterbody or periodically inundated for sufficient periods of time to provide spawning/nursery habitat for fish? **This plant community area is located along the western edge of the Pebble Creek wetland complex that provides this function.**
10. ☒ **Y** ☐ **N** Can the wetland provide significant food base for fish and wildlife (e.g. insects) crustaceans, voles, forage fish, amphibians, reptiles, shrews, wild rice, wild celery, duckweed, pondweeds, watermeal, bulrushes, bur reeds, arrowhead, smartweeds, millets...)?
11. ☒ **Y** ☐ **N** Is the wetland located in a priority watershed/township as identified in the Upper Mississippi and Great Lakes Joint Venture of the North American Waterfowl Management Plan?
12. ☒ **Y** ☐ **N** Is the wetland providing habitat that is scarce to the region?

Flood and Stormwater Storage/Attenuation

1. ☒ **Y** ☐ **N** Are there steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within the watershed (circle those that apply)?
2. ☒ **Y** ☐ **N** Does the wetland significantly reduce run-off velocity due to its size, configuration, braided flow patterns, or vegetation type and density?
3. ☒ **Y** ☐ **N** Does the wetland show evidence of flashy water level responses to storm events (debris marks, erosion lines, stormwater inputs, channelized inflow)?
4. ☒ **Y** ☐ **N** Is there a natural feature or human-made structure impeding drainage from the wetland that causes backwater conditions?
5. ☒ **Y** ☐ **N** Considering the size of the wetland area in relation to the size of its watershed, at any time during the year is water likely to reach the wetland's storage capacity (i.e. the level of easily observable wetland vegetation)? [For some cases where greater documentation is required, one should determine if the wetland has capacity to hold 25% of the run-off from a 2 year-24 hour storm event.]
6. ☒ **Y** ☐ **N** Considering the location of the wetland in relation to the associated surface water watershed, is the wetland important for attenuating or storing flood or stormwater peaks (i.e. is the wetland located in the mid or lower reaches of the watershed)?

Water Quality Protection

1. ☒ **Y** ☐ **N** Does the wetland receive overland flow or direct discharge of stormwater as a primary source of water (circle that which applies)? **Primary source from groundwater discharge**
2. ☒ **Y** ☐ **N** Do the surrounding land uses have the potential to deliver significant nutrient and/or sediment loads to the wetland?

3. ☒ ☐ Based on your answers to the flood/stormwater section above, does the wetland perform significant flood/stormwater attenuation (residence time to allow settling)?
4. ☒ ☐ Does the wetland have significant vegetative density to decrease water energy and allow settling of suspended materials?
5. ☒ ☐ Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface water?
6. ☒ ☐ Are algal blooms, heavy macrophyte growth, or other signs of excess nutrient loading to the wetland apparent (or historically reported)?

Shoreline Protection

1. ☒ ☐ Is the wetland in a lake fringe or riverine setting? If NO, STOP and enter "not applicable" for this function. If YES, then answer the applicable questions. **This wetland plant community area is located along the western edge of a wetland complex associated with Pebble Creek.**
2. ☒ ☐ Is the shoreline exposed to constant wave action caused by long wind fetch or boat traffic?
3. ☒ ☐ Is the shoreline and shallow littoral zone vegetated with submerged or emergent vegetation in the swash zone that decrease wave energy or perennial wetland species that form dense root mats and/or species that have strong stems that are resistant to erosive forces? **This wetland plant community area is part of a wetland complex that provides this function.**
4. ☒ ☐ Is the stream bank prone to erosion due to unstable soils, land uses, or ice floes? **This wetland plant community area is part of a wetland complex, the shoreline edge of which may experience ice flows.**
5. ☒ ☐ Is the stream bank vegetated with densely rooted shrubs that provide upper bank stability? **This wetland plant community area is part of a wetland complex that provides this function.**

Groundwater Recharge and Discharge

1. ☒ ☐ Related to discharge, are there observable (or reported) springs located in the wetland, physical indicators of springs such as marl soil, or vegetation indicators such as watercress or marsh marigold present that tend to indicate the presence of groundwater springs? **Groundwater discharge evident on slopes**
2. ☒ ☐ Related to discharge, may the wetland contribute to the maintenance of base flow in a stream?
3. ☒ ☐ Related to recharge, is the wetland located on or near a groundwater divide (e.g. a topographic high)? **Plant Community Area No. 7 is identified in SEWRPC Planning Report No. 52, A Regional Water Supply Plan for Southeastern Wisconsin, Volumes 1 and 2, as having a high groundwater recharge potential (See map).**

Aesthetics/Recreation/Education and Science

1. ☒ ☐ Is the wetland visible from any of the following kinds of vantage points: roads, public lands, houses, and/or businesses? (Circle all that apply.)
2. ☒ ☐ Is the wetland in or near any population centers? **City of Waukesha**
3. ☒ ☐ Is any part of the wetland in public or conservation ownership?
4. ☒ ☐ Does the public have direct access to the wetland from public roads or waterways? (Circle those that apply.)

5. Is the wetland itself relatively free of obvious human influences, such as:

- a. ☒ Y ☒ N Buildings? e. ☒ Y ☒ N Pollution?
b. ☒ Y ☒ N Roads? f. ☒ Y ☒ N Filling?
c. ☒ Y ☒ N Other structures? g. ☒ Y ☒ N Dredging/draining?
d. ☒ Y ☒ N Trash? h. ☒ Y ☒ N Domination by non-native vegetation?

6. Is the surrounding viewshed relatively free of obvious human influences, such as:

- a. ☒ Y ☒ N Buildings?
b. ☒ Y ☒ N Roads?
c. ☒ Y ☒ N Other structures?

7. ☒ Y ☒ N Is the wetland organized into a variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water)?

8. ☒ Y ☒ N Does the wetland add to the variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water) within the landscape as a whole?

9. Does the wetland encourage exploration because any of the following factors are present:

- a. ☒ Y ☒ N Long views within the wetland?
b. ☒ Y ☒ N Long views in the viewshed adjacent to the wetland?
c. ☒ Y ☒ N Convoluted edges within and/or around the wetland border?
d. ☒ Y ☒ N The wetland provides a different (and perhaps more natural/complex) kind of environment from the surrounding land covers?

10. ☒ Y ☒ N Is the wetland currently being used for (or does it have the potential to be used for) the following recreational activities? (Check all that apply.) **This plant community area is entirely in private ownership**

ACTIVITY	CURRENT USE	POTENTIAL USE
Nature study/photography		X
Hiking/biking/skiing		X
Hunting/fishing/trapping		X
Boating/canoeing		
Food harvesting		
Others (list)		

11. ☒ Y ☒ N Is the wetland currently being used, and/or does it have the potential for use for educational or scientific study purposes (circle that which applies)? **This plant community area is currently in private ownership. However, the potential is there for such activity.**

Wisconsin Department of Natural Resources

RAPID ASSESSMENT METHODOLOGY FOR EVALUATING WETLAND FUNCTIONAL VALUES

GENERAL INFORMATION

Name of Wetland: Plant Community Area No. 8
Owner(s): Leesley B. & Joan J. Hardy Living Trust – Tax Key No. WAKT1362999003 Deborah Thiem Rollo – WAKT1362998
Location: Waukesha County; NW ¼ Section 17, Township 6N, Range 19E
Project Name: Proposed Waukesha West Bypass
Evaluator(s): Donald M. Reed, PhD., Chief Biologist; Lawrence A. Leitner, PhD., Principal Biologist; Christopher J. Jors, Biologist, Southeastern Wisconsin Regional Planning Commission
Date(s) of Site Visit(s): August 4, 2011

Description of seasonality limitations of this inspection due to time of year of the evaluation and/or current hydrologic and climatologic conditions (e.g. after heavy rains, snow or ice cover, during drought year, during spring flood, during bird migration): **Precipitation records in 2011 indicate normal to below normal precipitation (0 to -1 inches) for June, below normal (-1 to -2 inches) for July, and below normal (-2 to -3 inches) for August.**

WETLAND DESCRIPTION

Wisconsin Wetlands Inventory classification: S3/E2K
Wetland Type: shallow open water deep marsh shallow marsh seasonally flooded basin bog floodplain forest alder thicket sedge meadow coniferous swamp fen wet meadow shrub-carr low prairie <u>hardwood swamp</u>
Estimated size of wetland in acres: Study area wetland = 1.1 acres

SUMMARY OF FUNCTIONAL VALUES

Based on the results of the attached functional assessment, rate the significance of each of the functional values for the subject wetland and check the appropriate box. Complete the table as a summary.

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	N/A
Floral Diversity		X			
Wildlife Habitat		X			
Fishery Habitat		X			
Flood/Stormwater Attenuation	X				
Water Quality Protection		X			
Shoreline Protection	X				
Groundwater			X		
Aesthetics/Recreation/Education		X			

List any Special Features/"Red Flags": **Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, observed by Commission staff in plant community area southeast of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff northwest of this location. In addition, Natural Heritage Inventory (NHI)**

identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. See page 5 for details.

SITE DESCRIPTION

I. HYDROLOGIC SETTING

A. Describe the geomorphology of the wetland:

- ☒ Depressional (includes slopes, potholes, small lakes, kettles, etc.)
- ☐ Riverine
- ☐ Lake Fringe
- ☐ Extensive Peatland

B. **Y(N)** Has the wetland hydrology been altered by ditching, tiles, dams, culverts, well pumping, diversion of surface flow, or changes to runoff within the watershed (circle those that apply)?

C. **Y(N)** Does the wetland have an inlet **(outlet)** or both (circle those that apply)?

D. **Y(N)** Is there any field evidence of wetland hydrology such as buttressed tree trunks, adventitious roots, drift lines, water marks, water stained leaves, soil mottling/gleying, organic soils layer, or oxidized rhizospheres (circle those that apply)? **Groundwater seepage evident during field inspection.**

E. **Y(N)** Does the wetland have standing water, and if so what is the average depth in inches? Approximately how much of the wetland is inundated?
No standing water observed during field inspection. However, large portions of subject wetland with soils saturated at surface.

F. How is the hydroperiod (seasonal water level pattern) of the wetland classified?

- ☐ Permanently Flooded
- ☐ Seasonally Flooded (water absent at end of growing season)
- ☒ Saturated (surface water seldom present)
- ☐ Artificially Flooded
- ☐ Artificially Drained

G. **Y(N)** Is the wetland a navigable body of water or is a portion of the wetland below the ordinary high-water mark of a navigable water body? List any surface waters associated with the wetland or in proximity to the wetland (note approximate distance from the wetland and navigability determination). Note if there is a surface water connection to other wetlands. **This plant community area portion of the wetland complex is not part of a navigable body of water. Nor is it below the Ordinary High Water Mark. However, this wetland is part of the larger Pebble Creek wetland complex and is approximately 1200 feet from the navigable portion of Pebble Creek.**

II. VEGETATION

A. Identify the vegetation communities present and the dominant species.

	floating leaved community dominated by:
	submerged aquatic community dominated by:
	emergent community dominated by:
	shrub community dominated by:
X	deciduous broad-leaved tree community dominated by: Fraxinus pennsylvanica, Impatiens capensis, and Phalaris arundinacea
	coniferous tree community dominated by:
	open sphagnum mat or bog
	sedge meadow/wet prairie community dominated by:
X	other (explain): Fen community dominated by Symplocarpus foetidus

B. Other plant species identified during site visit:

See attached species list

III. SOILS

A. NRCS Soil Map Classification: **Brookston silt loam (BsA) – Poorly Drained**

B. Field description: **None recorded. Although muck soil observed at the surface.**

☒ Organic (histosol)? If so, is it a muck or a peat?

☐ Mineral soil?

- Mottling, gleying, sulfidic materials, iron or manganese concretions, organic streaking (circle those that apply)
- Soil Description:
- Depth of mottling/gleying:
- Depth of A Horizon:
- Munsell Color of matrix and mottles
 - Matrix below the A horizon:
 - Mottles:

V. SURROUNDING LAND USES

A. What is the estimated area of the wetland watershed in acres? **22**

B. What are the surrounding land uses?

LAND-USE	ESTIMATED % OF WETLAND WATERSHED
Developed (Industrial/Commercial/Residential)	9
Agricultural/cropland	--
Agricultural/grazing	--
Forested (Upland)	10
Grassed recreation areas/parks	--
Old field	--
Highways or roads	2
Other (specify) : Wetland	1

VI. SITE SKETCH

See attached aerial map exhibit

FUNCTIONAL ASSESSMENT

The following assessment requires the evaluator to examine site conditions that provide evidence that a given functional value is present and to assess the significance of the wetland to perform those functions. Positive answers to questions indicate the presence of factors important for the function. The questions are not definitive and are only provided to guide the evaluation. After completing each section, the evaluator should consider the factors observed and use best professional judgement to rate the significance. The ratings should be recorded on page 1 of the assessment.

SPECIAL FEATURES/"RED FLAGS"

1. ☒ **Y** ☐ **N** Is the wetland in or adjacent to an area of special natural resource interest (NR 103.04, Wis. Adm. Code)? If so, check those that apply:
 - ☐ Cold water community as defined in s. NR 102.04(3)(b), Wis. Adm. Code, including trout streams, their tributaries, and trout lakes
 - ☐ Lakes Michigan and Superior and the Mississippi River
 - ☐ State or federal designated wild and scenic river
 - ☐ Designated state riverway
 - ☐ Designated state scenic urban waterway
 - ☒ Environmentally sensitive area or environmental corridor identified in an area-wide water quality management plan, special area management plan, special wetland inventory study, or an advanced delineation and identification study – **Contained entirely within a primary environmental corridor**
 - ☐ Calcareous fen
 - ☐ State park, forest, trail or recreation area
 - ☐ State and federal fish and wildlife refuges and fish and wildlife management areas
 - ☐ State or federal designated wilderness area
 - ☐ Designated or dedicated state natural area
 - ☐ Wild rice water listed in ch. NR 19.09, Wis. Adm. Code
 - ☐ Surface water identified as an outstanding or exceptional resource water in ch. NR 102, Wis. Adm. Code
2. ☒ **Y** ☐ **N** According to the Natural Heritage Inventory (Bureau of Endangered Resources) or direct observations, are there any rare, endangered, or threatened plant or animal species in, near, or using the wetland or adjacent lands? If so, list the species of concern: **Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, observed in plant community area southeast of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff northwest of this location. In addition, Natural Heritage Inventory (NHI) identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. This broad NHI finding is based upon an 1845 record for this species typically found in dry prairies. Accordingly, it is very unlikely that this plant community area would support this species.**
3. ☐ **Y** ☒ **N** Is the project located in an area that requires a State Coastal Zone Management Plan consistency determination?

Floral Diversity

1. ☒ **Y** ☐ **N** Does the wetland support a variety of native plant species (i.e. not a monotypic stand of cattail or giant reed grass and/or not dominated by exotic species such as reed canary grass, brome grass, buckthorn, purple loosestrife, etc.)?
2. ☒ **Y** ☐ **N** Is the wetland plant community regionally scarce or rare? **In general fens are considered a rare plant community area. Although this is not considered a calcareous fen.**

Wildlife and Fishery Habitat

1. List any species observed, evidenced (e.g. tracks, scat, nest/burrow, calls), or expected to utilize the wetland: **Raccoon, White-tailed deer, and passerine birds utilize this area.**
2. ☐ **Y** ☒ **N** Does the wetland contain a number of diverse vegetative cover types and a high degree of interspersed of those vegetation types?
3. ☐ **Y** ☒ **N** Is the estimated ratio of open water to cover between 30 and 70 percent? What is the estimated ratio? **Lower portions of wetland may have standing water early in growing season.**

4. ☒ **Y** ☐ **N** Does the surrounding upland habitat likely support a variety of animal species?
Class II Wildlife Habitat
5. ☒ **Y** ☐ **N** Is the wetland part of or associated with a wildlife corridor or designated environmental corridor?
Class II Wildlife Habitat & Primary environmental corridor
6. ☒ **Y** ☐ **N** Is the surrounding habitat and/or the wetland itself a large tract of undeveloped land important for wildlife that requires large home ranges (e.g. bear, woodland passerines)?
7. ☒ **Y** ☐ **N** Is the surrounding habitat and/or the wetland itself a relatively large tract of undeveloped land within an urbanized environment that is important for wildlife?
8. ☒ **Y** ☐ **N** Are there other wetland areas near the subject wetland that may be important to wildlife?
Important wetlands for wildlife along the Pebble Creek corridor
9. ☒ **Y** ☐ **N** Is the wetland contiguous with a permanent waterbody or periodically inundated for sufficient periods of time to provide spawning/nursery habitat for fish? **This plant community area is located along the western edge of the Pebble Creek wetland complex that provides this function.**
10. ☒ **Y** ☐ **N** Can the wetland provide significant food base for fish and wildlife (e.g. insects, crustaceans, voles, forage fish, amphibians, reptiles, shrews, wild rice, wild celery, duckweed, pondweeds, watermeal, bulrushes, bur reeds, arrowhead, smartweeds, millets...)?
11. ☒ **Y** ☐ **N** Is the wetland located in a priority watershed/township as identified in the Upper Mississippi and Great Lakes Joint Venture of the North American Waterfowl Management Plan?
12. ☒ **Y** ☐ **N** Is the wetland providing habitat that is scarce to the region?

Flood and Stormwater Storage/Attenuation

1. ☒ **Y** ☐ **N** Are there steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within the watershed (circle those that apply)?
2. ☒ **Y** ☐ **N** Does the wetland significantly reduce run-off velocity due to its size, configuration, braided flow patterns, or vegetation type and density?
3. ☒ **Y** ☐ **N** Does the wetland show evidence of flashy water level responses to storm events (debris marks, erosion lines, stormwater inputs, channelized inflow)?
4. ☒ **Y** ☐ **N** Is there a natural feature or human-made structure impeding drainage from the wetland that causes backwater conditions?
5. ☒ **Y** ☐ **N** Considering the size of the wetland area in relation to the size of its watershed, at any time during the year is water likely to reach the wetland's storage capacity (i.e. the level of easily observable wetland vegetation)? [For some cases where greater documentation is required, one should determine if the wetland has capacity to hold 25% of the run-off from a 2 year-24 hour storm event.]
6. ☒ **Y** ☐ **N** Considering the location of the wetland in relation to the associated surface water watershed, is the wetland important for attenuating or storing flood or stormwater peaks (i.e. is the wetland located in the mid or lower reaches of the watershed)?

Water Quality Protection

1. ☒ **Y** ☐ **N** Does the wetland receive overland flow or direct discharge of stormwater as a primary source of water (circle that which applies)? **Primary source from groundwater discharge**
2. ☒ **Y** ☐ **N** Do the surrounding land uses have the potential to deliver significant nutrient and/or sediment loads to the wetland?

3. ☒ ☐ Based on your answers to the flood/stormwater section above, does the wetland perform significant flood/stormwater attenuation (residence time to allow settling)?
4. ☒ ☐ Does the wetland have significant vegetative density to decrease water energy and allow settling of suspended materials?
5. ☒ ☐ Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface water?
6. ☒ ☐ Are algal blooms, heavy macrophyte growth, or other signs of excess nutrient loading to the wetland apparent (or historically reported)?

Shoreline Protection

1. ☒ ☐ Is the wetland in a lake fringe or riverine setting? If NO, STOP and enter "not applicable" for this function. If YES, then answer the applicable questions. **This wetland plant community area is located along the western edge of a wetland complex associated with Pebble Creek.**
2. ☒ ☐ Is the shoreline exposed to constant wave action caused by long wind fetch or boat traffic?
3. ☒ ☐ Is the shoreline and shallow littoral zone vegetated with submerged or emergent vegetation in the swash zone that decrease wave energy or perennial wetland species that form dense root mats and/or species that have strong stems that are resistant to erosive forces? **This wetland plant community area is part of a wetland complex that provides this function.**
4. ☒ ☐ Is the stream bank prone to erosion due to unstable soils, land uses, or ice floes? **This wetland plant community area is part of a wetland complex, the shoreline edge of which may experience ice flows.**
5. ☒ ☐ Is the stream bank vegetated with densely rooted shrubs that provide upper bank stability? **This wetland plant community area is part of a wetland complex that provides this function.**

Groundwater Recharge and Discharge

1. ☒ ☐ Related to discharge, are there observable (or reported) springs located in the wetland, physical indicators of springs such as marl soil, or vegetation indicators such as watercress or marsh marigold present that tend to indicate the presence of groundwater springs? **Groundwater discharge evident on slopes. Skunk cabbage listed as a sub-dominant species.**
2. ☒ ☐ Related to discharge, may the wetland contribute to the maintenance of base flow in a stream?
3. ☒ ☐ Related to recharge, is the wetland located on or near a groundwater divide (e.g. a topographic high)? **Plant Community Area No. 8 is identified in SEWRPC Planning Report No. 52, A Regional Water Supply Plan for Southeastern Wisconsin, Volumes 1 and 2, as having a high groundwater recharge potential (See map).**

Aesthetics/Recreation/Education and Science

1. ☒ ☐ Is the wetland visible from any of the following kinds of vantage points: roads, public lands, houses, and/or businesses? (Circle all that apply.)
2. ☒ ☐ Is the wetland in or near any population centers? **City of Waukesha**
3. ☒ ☐ Is any part of the wetland in public or conservation ownership?

4. ☒ Y ☒ N Does the public have direct access to the wetland from public roads or waterways? (Circle those that apply.)
5. Is the wetland itself relatively free of obvious human influences, such as:
- a. ☒ Y ☒ N Buildings?
 - b. ☒ Y ☒ N Roads?
 - c. ☒ Y ☒ N Other structures?
 - d. ☒ Y ☒ N Trash?
 - e. ☒ Y ☒ N Pollution?
 - f. ☒ Y ☒ N Filling?
 - g. ☒ Y ☒ N Dredging/drainage?
 - h. ☒ Y ☒ N Domination by non-native vegetation?
6. Is the surrounding viewshed relatively free of obvious human influences, such as:
- a. ☒ Y ☒ N Buildings?
 - b. ☒ Y ☒ N Roads?
 - c. ☒ Y ☒ N Other structures?
7. ☒ Y ☒ N Is the wetland organized into a variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water)?
8. ☒ Y ☒ N Does the wetland add to the variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water) within the landscape as a whole?
9. Does the wetland encourage exploration because any of the following factors are present:
- a. ☒ Y ☒ N Long views within the wetland?
 - b. ☒ Y ☒ N Long views in the viewshed adjacent to the wetland?
 - c. ☒ Y ☒ N Convoluted edges within and/or around the wetland border?
 - d. ☒ Y ☒ N The wetland provides a different (and perhaps more natural/complex) kind of environment from the surrounding land covers?
10. ☒ Y ☒ N Is the wetland currently being used for (or does it have the potential to be used for) the following recreational activities? (Check all that apply.) **This plant community area is entirely in private ownership**

ACTIVITY	CURRENT USE	POTENTIAL USE
Nature study/photography		X
Hiking/biking/skiing		X
Hunting/fishing/trapping		X
Boating/canoeing		
Food harvesting		
Others (list)		

11. ☒ Y ☒ N Is the wetland currently being used, and/or does it have the potential for use for educational or scientific study purposes (circle that which applies)? **This plant community area is currently in private ownership. However, the potential is there for these types of activity**

Wisconsin Department of Natural Resources

RAPID ASSESSMENT METHODOLOGY FOR EVALUATING WETLAND FUNCTIONAL VALUES

GENERAL INFORMATION

Name of Wetland: Plant Community Area No. 9
Owner(s): Waukesha County Parks & Land Use – Tax Key No. WAKT1361976005 Leesley B. & Joan J. Hardy Living Trust – Tax Key No. WAKT1362999003 Gibson Fund LLP – Tax Key No. WAKT1361976002
Location: Waukesha County; NE ¼ & NW ¼, Section 17, Township 6N, Range 19E
Project Name: Proposed Waukesha West Bypass
Evaluator(s): Donald M. Reed, PhD., Chief Biologist; Lawrence A. Leitner, PhD., Principal Biologist; Christopher J. Jors, Biologist, Southeastern Wisconsin Regional Planning Commission
Date(s) of Site Visit(s): August 4 and 30, 2011

Description of seasonality limitations of this inspection due to time of year of the evaluation and/or current hydrologic and climatologic conditions (e.g. after heavy rains, snow or ice cover, during drought year, during spring flood, during bird migration): **Precipitation records in 2011 indicate normal to below normal precipitation (0 to -1 inches) for June, below normal (-1 to -2 inches) for July, and below normal (-2 to -3 inches) for August.**

WETLAND DESCRIPTION

Wisconsin Wetlands Inventory classification: S3/E2K
Wetland Type: shallow open water <u>deep marsh</u> shallow marsh seasonally flooded basin bog floodplain forest alder thicket <u>sedge meadow</u> coniferous swamp fen <u>wet meadow</u> <u>shrub-carr</u> low prairie <u>hardwood swamp</u>
Estimated size of wetland in acres: Study area wetland = 1.4 acres

SUMMARY OF FUNCTIONAL VALUES

Based on the results of the attached functional assessment, rate the significance of each of the functional values for the subject wetland and check the appropriate box. Complete the table as a summary.

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	N/A
Floral Diversity			X		
Wildlife Habitat			X		
Fishery Habitat			X		
Flood/Stormwater Attenuation		X			
Water Quality Protection			X		
Shoreline Protection		X			
Groundwater			X		
Aesthetics/Recreation/Education		X			

List any Special Features/"Red Flags": **Part of this plant community area is identified as a Natural Area of local significance (NA-3) known as Pebble Creek Wetlands. Longear sunfish (*Lepomis megalotis*),**

a State-designated Threatened species, has been recorded by the Commission staff along this segment of Pebble Creek. Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, observed by Commission staff south of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff northwest of this location. In addition, Natural Heritage Inventory (NHI) identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. See page 5 for details.

SITE DESCRIPTION

I. HYDROLOGIC SETTING

A. Describe the geomorphology of the wetland:

- ☐ Depressional (includes slopes, potholes, small lakes, kettles, etc.)
- ☒ Riverine
- ☐ Lake Fringe
- ☐ Extensive Peatland

B. ☒ **Y** ☐ **N** Has the wetland hydrology been altered by ditching tiles, dams culverts well pumping, diversion of surface flow or changes to runoff within the watershed (circle those that apply)?
Past CTH D (Sunset Drive) construction through wetland complex impeding & redirecting (ditching) natural flows under CTH D bridge. Fill and a culvert placed at farm access driveway at west side of wetland.

C. ☒ **Y** ☐ **N** Does the wetland have an inlet, outlet, or both (circle those that apply)?
Pebble Creek inlet from north from bridge under CTH D & outlet to south

D. ☒ **Y** ☐ **N** Is there any field evidence of wetland hydrology such as buttressed tree trunks, adventitious roots, drift lines, water marks, water stained leaves, soil mottling/gleying organic soils layer or oxidized rhizospheres (circle those that apply)? **Wetland hydrology indicators observed at Sample Site No. 14 include Saturation at surface, hydrogen sulfide odor, geomorphic position, and positive FAC-Neutral Test. Also observed organic soils – a histosol (muck).**

E. ☒ **Y** ☐ **N** Does the wetland have standing water, and if so what is the average depth in inches? Approximately how much of the wetland is inundated?
No standing water observed at sample site. However, surface water flow within Pebble Creek channel observed. Parts of wetland likely inundated in early growing season.

F. How is the hydroperiod (seasonal water level pattern) of the wetland classified?

- ☐ Permanently Flooded
- ☒ Seasonally Flooded (water absent at end of growing season)
- ☐ Saturated (surface water seldom present)
- ☐ Artificially Flooded
- ☐ Artificially Drained

G. ☒ **Y** ☐ **N** Is the wetland a navigable body of water or is a portion of the wetland below the ordinary high-water mark of a navigable water body? List any surface waters associated with the wetland or in proximity to the wetland (note approximate distance from the wetland and navigability determination). Note if there is a surface water connection to other wetlands.
Pebble Creek, which flows through the subject plant community area, is navigable. There is a surface water connection to other wetlands.

II. VEGETATION

A. Identify the vegetation communities present and the dominant species.

	floating leaved community dominated by:
	submerged aquatic community dominated by:
X	emergent community dominated by: Phalaris arundinacea
X	shrub community dominated by: Salix bebbiana
X	deciduous broad-leaved tree community dominated by: While no tree species were listed as dominant, Fraxinus pennsylvanica, Ulmus Americana, and Acer negundo are present.
	coniferous tree community dominated by:
	open sphagnum mat or bog
X	sedge meadow/wet prairie community dominated by: Carex stricta
	other (explain)

B. Other plant species identified during site visit:

See attached species list

III. SOILS

A. NRCS Soil Map Classification: **Brookston silt loam (BsA) – poorly drained; Lamartine silt loam (LmB) – Somewhat poorly drained; Sebewa silt loam (Sm) – Poorly drained; Palms muck (Pa) - Wet alluvial land (Ww); and Mundelein silt loam (MzfA) – Somewhat poorly drained.**

B. Field description: **Recorded August 4, 2011**

☒ Organic (histosol)? If so, is it a muck or a peat? **Muck – Histosol**

☐ Mineral soil?

- Mottling, gleying, sulfidic materials, iron or manganese concretions, organic streaking (circle those that apply) **Hydrogen sulfide odor**
- Soil Description: **See below**
- Depth of mottling/gleying: **NA**
- Depth of A Horizon: **NA**
- Munsell Color of matrix and mottles
 - Matrix below the A horizon: --
 - Mottles: --

Depth (inches)	Matrix Color	Redox Concentrations Color	Redox Concentrations Abundance/Contrast	Texture
0-20	5Y 2.5/1	--	--	Muck

V. SURROUNDING LAND USES

A. What is the estimated area of the wetland watershed in acres? **14**

B. What are the surrounding land uses?

LAND-USE	ESTIMATED % OF WETLAND WATERSHED
Developed (Industrial/Commercial/Residential)	--
Agricultural/cropland	--
Agricultural/grazing	--
Forested (Upland)	--
Grassed recreation areas/parks	--
Old field	2
Highways or roads	1
Other (specify) : Wetland	11

VI. SITE SKETCH

See attached aerial map exhibit

FUNCTIONAL ASSESSMENT

The following assessment requires the evaluator to examine site conditions that provide evidence that a given functional value is present and to assess the significance of the wetland to perform those functions. Positive answers to questions indicate the presence of factors important for the function. The questions are not definitive and are only provided to guide the evaluation. After completing each section, the evaluator should consider the factors observed and use best professional judgement to rate the significance. The ratings should be recorded on page 1 of the assessment.

SPECIAL FEATURES/"RED FLAGS"

1. ☒ **Y** ☐ **N** Is the wetland in or adjacent to an area of special natural resource interest (NR 103.04, Wis. Adm. Code)? If so, check those that apply:
 - ☐ Cold water community as defined in s. NR 102.04(3)(b), Wis. Adm. Code, including trout streams, their tributaries, and trout lakes
 - ☐ Lakes Michigan and Superior and the Mississippi River
 - ☐ State or federal designated wild and scenic river
 - ☐ Designated state riverway
 - ☐ Designated state scenic urban waterway
 - ☒ Environmentally sensitive area or environmental corridor identified in an area-wide water quality management plan, special area management plan, special wetland inventory study, or an advanced delineation and identification study – **Part of this plant community area is identified as a Natural Area of local significance (NA-3) known as Pebble Creek Wetlands. Also Primary environmental corridor and ADID wetland.**
 - ☐ Calcareous fen
 - ☐ State park, forest, trail or recreation area
 - ☐ State and federal fish and wildlife refuges and fish and wildlife management areas
 - ☐ State or federal designated wilderness area
 - ☐ Designated or dedicated state natural area
 - ☐ Wild rice water listed in ch. NR 19.09, Wis. Adm. Code
 - ☐ Surface water identified as an outstanding or exceptional resource water in ch. NR 102, Wis. Adm. Code
2. ☒ **Y** ☐ **N** According to the Natural Heritage Inventory (Bureau of Endangered Resources) or direct observations, are there any rare, endangered, or threatened plant or animal species in, near, or using the wetland or adjacent lands? If so, list the species of concern: **Longear sunfish (*Lepomis megalotis*), a State-designated Threatened species, has been recorded by the Commission staff along this segment of Pebble Creek. Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, observed by Commission staff south of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff northwest of this location. In addition, Natural Heritage Inventory (NHI) identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. This broad NHI finding is based upon an 1845 record for this species typically found in dry prairies. Accordingly, it is very unlikely that this plant community area would support this species.**
3. ☐ **Y** ☒ **N** Is the project located in an area that requires a State Coastal Zone Management Plan consistency determination?

Floral Diversity

1. ☒ **Y** ☐ **N** Does the wetland support a variety of native plant species (i.e. not a monotypic stand of cattail or giant reed grass and/or not dominated by exotic species such as reed canary grass, brome grass, buckthorn, purple loosestrife, etc.)?
2. ☐ **Y** ☒ **N** Is the wetland plant community regionally scarce or rare?

Wildlife and Fishery Habitat

1. List any species observed, evidenced (e.g. tracks, scat, nest/burrow, calls), or expected to utilize the wetland: **Northern pike determined by the Commission staff to be a resident fish species in this segment of Pebble Creek. Total of 29 species of fish recorded in this reach including primary coldwater, secondary coolwater, and warmwater fish assemblages. Macroinvertebrate abundance and diversity are indicative of very good water quality in this reach. Raccon, White-tailed deer, passerine birds, and waterfowl utilize this plant community area.**

2. ☒ **Y** ☐ **N** Does the wetland contain a number of diverse vegetative cover types and a high degree of interspersed of those vegetation types?
3. ☒ **Y** ☐ **N** Is the estimated ratio of open water to cover between 30 and 70 percent? What is the estimated ratio? **5% - Open water in creek bed**
4. ☒ **Y** ☐ **N** Does the surrounding upland habitat likely support a variety of animal species?
Class II Wildlife Habitat
5. ☒ **Y** ☐ **N** Is the wetland part of or associated with a wildlife corridor or designated environmental corridor?
Class I Wildlife Habitat & Primary environmental corridor
6. ☒ **Y** ☐ **N** Is the surrounding habitat and/or the wetland itself a large tract of undeveloped land important for wildlife that requires large home ranges (e.g. bear, woodland passerines)?
7. ☒ **Y** ☐ **N** Is the surrounding habitat and/or the wetland itself a relatively large tract of undeveloped land within an urbanized environment that is important for wildlife?
8. ☒ **Y** ☐ **N** Are there other wetland areas near the subject wetland that may be important to wildlife?
Important wetlands for wildlife along the Pebble Creek corridor.
9. ☒ **Y** ☐ **N** Is the wetland contiguous with a permanent waterbody or periodically inundated for sufficient periods of time to provide spawning/nursery habitat for fish? **Pebble Creek supports a resident population of Northern pike and portions of this area are within the modeled 2-year floodplain which is likely to support spawning habitat.**
10. ☒ **Y** ☐ **N** Can the wetland provide significant food base for fish and wildlife (e.g. insects, crustaceans, voles, forage fish, amphibians, reptiles, shrews, wild rice, wild celery, duckweed, pondweeds, watermeal, bulrushes, bur reeds, arrowhead, smartweeds, millets...)?
11. ☒ **Y** ☐ **N** Is the wetland located in a priority watershed/township as identified in the Upper Mississippi and Great Lakes Joint Venture of the North American Waterfowl Management Plan?
12. ☒ **Y** ☐ **N** Is the wetland providing habitat that is scarce to the region?

Flood and Stormwater Storage/Attenuation

1. ☒ **Y** ☐ **N** Are there steep slopes large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within the watershed (circle those that apply)? **Steep slopes to west and CTH D is a large impervious area.**
2. ☒ **Y** ☐ **N** Does the wetland significantly reduce run-off velocity due to its size, configuration, braided flow patterns, or vegetation type and density? **Runoff velocity is significantly reduced when stormwater enters the subject wetland**
3. ☒ **Y** ☐ **N** Does the wetland show evidence of flashy water level responses to storm events (debris marks, erosion lines, stormwater inputs, channelized inflow)?
4. ☒ **Y** ☐ **N** Is there a natural feature or human-made structure impeding drainage from the wetland that causes backwater conditions?
5. ☒ **Y** ☐ **N** Considering the size of the wetland area in relation to the size of its watershed, at any time during the year is water likely to reach the wetland's storage capacity (i.e. the level of easily observable wetland vegetation)? [For some cases where greater documentation is required, one should determine if the wetland has capacity to hold 25% of the run-off from a 2 year-24 hour storm event.] **But it is important to note that portions of this wetland are within the modeled 100-year floodplain and floodway.**
6. ☒ **Y** ☐ **N** Considering the location of the wetland in relation to the associated surface water watershed, is the wetland important for attenuating or storing flood or stormwater peaks (i.e. is the wetland located in the mid or lower reaches of the watershed)? **Portions of this wetland are within the modeled 100-year floodplain and floodway.**

Water Quality Protection

1. ☒ **Y** ☐ **N** Does the wetland receive overland flow or direct discharge of stormwater as a primary source of water (circle that which applies)? **Primary source of water contribution to wetland is from Pebble Creek**
2. ☒ **Y** ☐ **N** Do the surrounding land uses have the potential to deliver significant nutrient and/or sediment loads to the wetland? **Road salt from CTH D**
3. ☒ **Y** ☐ **N** Based on your answers to the flood/stormwater section above, does the wetland perform significant flood/stormwater attenuation (residence time to allow settling)?
4. ☒ **Y** ☐ **N** Does the wetland have significant vegetative density to decrease water energy and allow settling of suspended materials?
5. ☒ **Y** ☐ **N** Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface water?
6. ☐ **Y** ☒ **N** Are algal blooms, heavy macrophyte growth, or other signs of excess nutrient loading to the wetland apparent (or historically reported)?

Shoreline Protection

1. ☒ **Y** ☐ **N** Is the wetland in a lake fringe or riverine setting? If NO, STOP and enter "not applicable" for this function. If YES, then answer the applicable questions.
2. ☐ **Y** ☒ **N** Is the shoreline exposed to constant wave action caused by long wind fetch or boat traffic?
3. ☒ **Y** ☐ **N** Is the shoreline and shallow littoral zone vegetated with submerged or emergent vegetation in the swash zone that decrease wave energy or perennial wetland species that form dense root mats and/or species that have strong stems that are resistant to erosive forces?
4. ☒ **Y** ☐ **N** Is the stream bank prone to erosion due to unstable soils, land uses, or ice floes?
5. ☒ **Y** ☐ **N** Is the stream bank vegetated with densely rooted shrubs that provide upper bank stability?

Groundwater Recharge and Discharge

1. ☒ **Y** ☐ **N** Related to discharge, are there observable (or reported) springs located in the wetland, physical indicators of springs such as marl soil, or vegetation indicators such as watercress or marsh marigold present that tend to indicate the presence of groundwater springs? **Springs reported and observed throughout Pebble Creek watershed**
2. ☒ **Y** ☐ **N** Related to discharge, may the wetland contribute to the maintenance of base flow in a stream?
3. ☒ **Y** ☐ **N** Related to recharge, is the wetland located on or near a groundwater divide (e.g. a topographic high)? **A portion of Plant Community Area No. 9 is identified in SEWRPC Planning Report No. 52, A Regional Water Supply Plan for Southeastern Wisconsin, Volumes 1 and 2, as having a high groundwater recharge potential (See map).**

Aesthetics/Recreation/Education and Science

1. ☒ **Y** ☐ **N** Is the wetland visible from any of the following kinds of vantage points: roads public lands houses, and/or businesses? (Circle all that apply.)
2. ☒ **Y** ☐ **N** Is the wetland in or near any population centers? **City of Waukesha**

3. ☒ **Y** ☐ **N** Is any part of the wetland in public or conservation ownership? **Waukesha County Parks & Land Use**

4. ☒ **Y** ☐ **N** Does the public have direct access to the wetland from public roads or waterways? (Circle those that apply.) **Direct access limited to portion of wetland owned by Waukesha County**

5. Is the wetland itself relatively free of obvious human influences, such as:

- a. ☒ **Y** ☐ **N** Buildings? e. ☒ **Y** ☐ **N** Pollution?
b. ☒ **Y** ☐ **N** Roads? f. ☒ **Y** ☐ **N** Filling?
c. ☒ **Y** ☐ **N** Other structures? g. ☒ **Y** ☐ **N** Dredging/drainage?
d. ☒ **Y** ☐ **N** Trash? h. ☒ **Y** ☐ **N** Domination by non-native vegetation?

6. Is the surrounding viewshed relatively free of obvious human influences, such as:

- a. ☒ **Y** ☐ **N** Buildings?
b. ☒ **Y** ☐ **N** Roads?
c. ☒ **Y** ☐ **N** Other structures?

7. ☒ **Y** ☐ **N** Is the wetland organized into a variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water)?

8. ☒ **Y** ☐ **N** Does the wetland add to the variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water) within the landscape as a whole?

9. Does the wetland encourage exploration because any of the following factors are present:

- a. ☒ **Y** ☐ **N** Long views within the wetland?
b. ☒ **Y** ☐ **N** Long views in the viewshed adjacent to the wetland?
c. ☒ **Y** ☐ **N** Convoluted edges within and/or around the wetland border?
d. ☒ **Y** ☐ **N** The wetland provides a different (and perhaps more natural/complex) kind of environment from the surrounding land covers?

10. ☒ **Y** ☐ **N** Is the wetland currently being used for (or does it have the potential to be used for) the following recreational activities? (Check all that apply.)

ACTIVITY	CURRENT USE	POTENTIAL USE
Nature study/photography		X
Hiking/biking/skiing		X
Hunting/fishing/trapping		X
Boating/canoeing		X
Food harvesting		
Others (list)		

11. ☒ **Y** ☐ **N** Is the wetland currently being used, and/or does it have the potential for use for educational or scientific study purposes (circle that which applies)?

Wisconsin Department of Natural Resources

RAPID ASSESSMENT METHODOLOGY FOR EVALUATING WETLAND FUNCTIONAL VALUES

GENERAL INFORMATION

Name of Wetland: Plant Community Area No. 10
Owner(s): Waukesha County Parks & Land Use - Tax Key No. WAKT1361976005 Robert Knuth Rick Knuth et al – Tax Key No. WAKT1361020
Location: Waukesha County; NE ¼ Section 17, Township 6N, Range 19E
Project Name: Proposed Waukesha West Bypass
Evaluator(s): Donald M. Reed, PhD., Chief Biologist; Lawrence A. Leitner, PhD., Principal Biologist; Christopher J. Jors, Biologist, Southeastern Wisconsin Regional Planning Commission
Date(s) of Site Visit(s): August 4, 2011

Description of seasonality limitations of this inspection due to time of year of the evaluation and/or current hydrologic and climatologic conditions (e.g. after heavy rains, snow or ice cover, during drought year, during spring flood, during bird migration): **Precipitation records in 2011 indicate normal to below normal precipitation (0 to -1 inches) for June, below normal (-1 to -2 inches) for July, and below normal (-2 to -3 inches) for August.**

WETLAND DESCRIPTION

Wisconsin Wetlands Inventory classification: S3/E2K & T3K
Wetland Type: shallow open water deep marsh <u>shallow marsh</u> seasonally flooded basin bog floodplain forest alder thicket sedge meadow coniferous swamp fen <u>atypical (mowed) wetland</u> <u>wet meadow</u> shrub-carr low prairie hardwood swamp
Estimated size of wetland in acres: Study area wetland = 0.2 acres

SUMMARY OF FUNCTIONAL VALUES

Based on the results of the attached functional assessment, rate the significance of each of the functional values for the subject wetland and check the appropriate box. Complete the table as a summary.

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	N/A
Floral Diversity		X			
Wildlife Habitat		X			
Fishery Habitat		X			
Flood/Stormwater Attenuation		X			
Water Quality Protection			X		
Shoreline Protection		X			
Groundwater		X			
Aesthetics/Recreation/Education		X			

List any Special Features/"Red Flags": **Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, observed by Commission staff in connected wetlands south of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff northwest of this location. In addition, Natural Heritage Inventory (NHI)**

identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. See page 5 for details.

SITE DESCRIPTION

I. HYDROLOGIC SETTING

A. Describe the geomorphology of the wetland:

- ☐ Depressional (includes slopes, potholes, small lakes, kettles, etc.)
- ☒ Riverine
- ☐ Lake Fringe
- ☐ Extensive Peatland

B. **(Y)** **(N)** Has the wetland hydrology been altered by ditching tiles, dams culverts well pumping, diversion of surface flow or changes to runoff within the watershed (circle those that apply)?
Past CTHD construction through wetland complex including roadside ditches & culverts.

C. **(Y)** **(N)** Does the wetland have an inlet, outlet, or both (circle those that apply)? **Roadside ditch acts as an inlet & outlet.**

D. **(Y)** **(N)** Is there any field evidence of wetland hydrology such as buttressed tree trunks, adventitious roots, drift lines, water marks, water stained leaves, soil mottling gleying, organic soils layer, or oxidized rhizospheres (circle those that apply)? **Geomorphic Position and positive FAC-Neutral Test**

E. **(Y)** **(N)** Does the wetland have standing water, and if so what is the average depth in inches? Approximately how much of the wetland is inundated?
No standing water observed during field inspection. However, parts of wetland likely inundated in early growing season.

F. How is the hydroperiod (seasonal water level pattern) of the wetland classified?

- ☐ Permanently Flooded
- ☒ Seasonally Flooded (water absent at end of growing season)
- ☐ Saturated (surface water seldom present)
- ☐ Artificially Flooded
- ☐ Artificially Drained

G. **(Y)** **(N)** Is the wetland a navigable body of water or is a portion of the wetland below the ordinary high-water mark of a navigable water body? List any surface waters associated with the wetland or in proximity to the wetland (note approximate distance from the wetland and navigability determination). Note if there is a surface water connection to other wetlands. **This plant community area portion of the wetland complex is not part of a navigable body of water. Nor is it below the Ordinary High Water Mark. However, this wetland is part of the larger Pebble Creek wetland complex and is approximately 850 feet from the navigable portion of Pebble Creek.**

II. VEGETATION

A. Identify the vegetation communities present and the dominant species.

	floating leaved community dominated by:
	submerged aquatic community dominated by:
X	emergent community dominated by: Typha latifolia, Helianthus grosseserratus, and Solidago altissima
	shrub community dominated by:
	deciduous broad-leaved tree community dominated by:
	coniferous tree community dominated by:
	open sphagnum mat or bog
	sedge meadow/wet prairie community dominated by:
X	other (explain): Atypical (mowed) wetland – A residential lawn with Poa pratensis (not listed as dominant due to relative size of this wetland)

B. Other plant species identified during site visit:

See attached species list

III. SOILS

A. NRCS Soil Map Classification: **Mundelein silt loam (MzfA) – Somewhat poorly drained**

B. Field description: **Recorded August 4, 2011**

☐ Organic (histosol)? If so, is it a muck or a peat?

☒ Mineral soil?

- **Mottling** gleying, sulfidic materials, **iron** or manganese **concretions**, organic streaking (circle those that apply)
- Soil Description: **See below**
- Depth of mottling/gleying: **12 inches**
- Depth of A Horizon: **13.5 inches**
- Munsell Color of matrix and mottles
 - Matrix below the A horizon: **2.5Y 4/2 (80%) & 2.5Y 3/1 (20%)**
 - Mottles: **7.5YR 4/6**

Depth (inches)	Matrix Color	Redox Concentrations Color	Redox Concentrations Abundance/Contrast	Texture
0-12	N 2.5/0	--	--	Silty clay loam
12-13.5	2.5 2.5/1	5Y 4/6	Common/prominent	Clay loam
13.5-16	2.5Y 4/2 (80%) 2.5 Y 3/1 (20%)	7.5YR 4/6	Common/prominent	Clay loam
16-20	10YR 5/3	7.5YR 4/6	Common/prominent	Silt

V. SURROUNDING LAND USES

A. What is the estimated area of the wetland watershed in acres? **13**

B. What are the surrounding land uses?

LAND-USE	ESTIMATED % OF WETLAND WATERSHED
Developed (Industrial/Commercial/Residential)	10.5
Agricultural/cropland	--
Agricultural/grazing	--
Forested (Upland)	--
Grassed recreation areas/parks	--
Old field	0.5
Highways or roads	1.5
Other (specify) : Wetland	0.5

VI. SITE SKETCH

See attached aerial map exhibit

FUNCTIONAL ASSESSMENT

The following assessment requires the evaluator to examine site conditions that provide evidence that a given functional value is present and to assess the significance of the wetland to perform those functions. Positive answers to questions indicate the presence of factors important for the function. The questions are not definitive and are only provided to guide the evaluation. After completing each section, the evaluator should consider the factors observed and use best professional judgement to rate the significance. The ratings should be recorded on page 1 of the assessment.

SPECIAL FEATURES/"RED FLAGS"

1. ☒ **Y** ☐ **N** Is the wetland in or adjacent to an area of special natural resource interest (NR 103.04, Wis. Adm. Code)? If so, check those that apply:
 - ☐ Cold water community as defined in s. NR 102.04(3)(b), Wis. Adm. Code, including trout streams, their tributaries, and trout lakes
 - ☐ Lakes Michigan and Superior and the Mississippi River
 - ☐ State or federal designated wild and scenic river
 - ☐ Designated state riverway
 - ☐ Designated state scenic urban waterway
 - ☒ Environmentally sensitive area or environmental corridor identified in an area-wide water quality management plan, special area management plan, special wetland inventory study, or an advanced delineation and identification study – **Primary environmental corridor; ADID wetland**
 - ☐ Calcareous fen
 - ☐ State park, forest, trail or recreation area
 - ☐ State and federal fish and wildlife refuges and fish and wildlife management areas
 - ☐ State or federal designated wilderness area
 - ☐ Designated or dedicated state natural area
 - ☐ Wild rice water listed in ch. NR 19.09, Wis. Adm. Code
 - ☐ Surface water identified as an outstanding or exceptional resource water in ch. NR 102, Wis. Adm. Code
2. ☒ **Y** ☐ **N** According to the Natural Heritage Inventory (Bureau of Endangered Resources) or direct observations, are there any rare, endangered, or threatened plant or animal species in, near, or using the wetland or adjacent lands? If so, list the species of concern: **Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, observed by Commission staff south of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff northwest of this location. In addition, Natural Heritage Inventory (NHI) identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. This broad NHI finding is based upon an 1845 record for this species typically found in dry prairies. Accordingly, it is very unlikely that this plant community area would support this species.**
3. ☐ **Y** ☒ **N** Is the project located in an area that requires a State Coastal Zone Management Plan consistency determination?

Floral Diversity

1. ☒ **Y** ☐ **N** Does the wetland support a variety of native plant species (i.e. not a monotypic stand of cattail or giant reed grass and/or not dominated by exotic species such as reed canary grass, brome grass, buckthorn, purple loosestrife, etc.)?
2. ☐ **Y** ☒ **N** Is the wetland plant community regionally scarce or rare?

Wildlife and Fishery Habitat

1. List any species observed, evidenced (e.g. tracks, scat, nest/burrow, calls), or expected to utilize the wetland: **Raccoon, White-tailed deer, muskrat, marsh birds and song birds utilize this area.**
2. ☐ **Y** ☒ **N** Does the wetland contain a number of diverse vegetative cover types and a high degree of interspersed of those vegetation types? **Area is recovering from past plowing.**
3. ☐ **Y** ☒ **N** Is the estimated ratio of open water to cover between 30 and 70 percent? What is the estimated ratio? **Standing water limited to early growing season.**

4. ☒ ☐ Does the surrounding upland habitat likely support a variety of animal species?
5. ☒ ☐ Is the wetland part of or associated with a wildlife corridor or designated environmental corridor?
Class II Wildlife Habitat & Primary environmental corridor
6. ☒ ☐ Is the surrounding habitat and/or the wetland itself a large tract of undeveloped land important for wildlife that requires large home ranges (e.g. bear, woodland passerines)?
7. ☒ ☐ Is the surrounding habitat and/or the wetland itself a relatively large tract of undeveloped land within an urbanized environment that is important for wildlife?
8. ☒ ☐ Are there other wetland areas near the subject wetland that may be important to wildlife?
Important wetlands for wildlife along the Pebble Creek corridor
9. ☒ ☐ Is the wetland contiguous with a permanent waterbody or periodically inundated for sufficient periods of time to provide spawning/nursery habitat for fish? **This plant community area is part of a wetland-floodplain complex adjacent to Pebble Creek**
10. ☒ ☐ Can the wetland provide significant food base for fish and wildlife (e.g. insects, crustaceans, voles, forage fish, amphibians, reptiles, shrews, wild rice, wild celery, duckweed, pondweeds, watermeal, bulrushes, bur reeds, arrowhead, smartweeds, millets...)?
11. ☒ ☐ Is the wetland located in a priority watershed/township as identified in the Upper Mississippi and Great Lakes Joint Venture of the North American Waterfowl Management Plan?
12. ☒ ☐ Is the wetland providing habitat that is scarce to the region?

Flood and Stormwater Storage/Attenuation

1. ☒ ☐ Are there steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within the watershed (circle those that apply)? **Large impervious surfaces along CTH D**
2. ☒ ☐ Does the wetland significantly reduce run-off velocity due to its size, configuration, braided flow patterns, or vegetation type and density? **Runoff velocity is significantly reduced when stormwater enters the subject wetland**
3. ☒ ☐ Does the wetland show evidence of flashy water level responses to storm events (debris marks, erosion lines, stormwater inputs, channelized inflow)?
4. ☒ ☐ Is there a natural feature or human-made structure impeding drainage from the wetland that causes backwater conditions?
5. ☒ ☐ Considering the size of the wetland area in relation to the size of its watershed, at any time during the year is water likely to reach the wetland's storage capacity (i.e. the level of easily observable wetland vegetation)? [For some cases where greater documentation is required, one should determine if the wetland has capacity to hold 25% of the run-off from a 2 year-24 hour storm event.] **But it is important to note that portions of this wetland are within the modeled 100-year floodplain.**
6. ☒ ☐ Considering the location of the wetland in relation to the associated surface water watershed, is the wetland important for attenuating or storing flood or stormwater peaks (i.e. is the wetland located in the mid or lower reaches of the watershed)? **Portions of this wetland are within the modeled 100-year floodplain.**

Water Quality Protection

1. ☒ ☐ Does the wetland receive overland flow or direct discharge of stormwater as a primary source of water (circle that which applies)? **Approximately equal sources from overland flow & discharge from roadside ditches that drain residential lands to east.**

2. ☒ **Y** ☐ **N** Do the surrounding land uses have the potential to deliver significant nutrient and/or sediment loads to the wetland? **Road salt from CTH D and fertilizers from residential development**
3. ☒ **Y** ☐ **N** Based on your answers to the flood/stormwater section above, does the wetland perform significant flood/stormwater attenuation (residence time to allow settling)?
4. ☒ **Y** ☐ **N** Does the wetland have significant vegetative density to decrease water energy and allow settling of suspended materials?
5. ☒ **Y** ☐ **N** Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface water?
6. ☐ **Y** ☒ **N** Are algal blooms, heavy macrophyte growth, or other signs of excess nutrient loading to the wetland apparent (or historically reported)?

Shoreline Protection

1. ☒ **Y** ☐ **N** Is the wetland in a lake fringe or riverine setting? If NO, STOP and enter "not applicable" for this function. If YES, then answer the applicable questions. **This wetland plant community area is located along the eastern edge of a wetland complex associated with Pebble Creek.**
2. ☐ **Y** ☒ **N** Is the shoreline exposed to constant wave action caused by long wind fetch or boat traffic?
3. ☒ **Y** ☐ **N** Is the shoreline and shallow littoral zone vegetated with submerged or emergent vegetation in the swash zone that decrease wave energy or perennial wetland species that form dense root mats and/or species that have strong stems that are resistant to erosive forces? **This wetland plant community area is part of a wetland complex that provides this function.**
4. ☒ **Y** ☐ **N** Is the stream bank prone to erosion due to unstable soils, land uses, or ice floes? **This wetland plant community area is part of a wetland complex, the shoreline edge of which may experience ice flows.**
5. ☒ **Y** ☐ **N** Is the stream bank vegetated with densely rooted shrubs that provide upper bank stability? **This wetland plant community area is part of a wetland complex that provides this function.**

Groundwater Recharge and Discharge

1. ☒ **Y** ☐ **N** Related to discharge, are there observable (or reported) springs located in the wetland, physical indicators of springs such as marl soil, or vegetation indicators such as watercress or marsh marigold present that tend to indicate the presence of groundwater springs? **Springs reported and observed throughout Pebble Creek watershed**
2. ☒ **Y** ☐ **N** Related to discharge, may the wetland contribute to the maintenance of base flow in a stream?
3. ☐ **Y** ☒ **N** Related to recharge, is the wetland located on or near a groundwater divide (e.g. a topographic high)?

Aesthetics/Recreation/Education and Science

1. ☒ **Y** ☐ **N** Is the wetland visible from any of the following kinds of vantage points: roads, public lands, houses, and/or businesses? (Circle all that apply.)
2. ☒ **Y** ☐ **N** Is the wetland in or near any population centers? **City of Waukesha**
3. ☒ **Y** ☐ **N** Is any part of the wetland in public or conservation ownership? **Waukesha County Parks & Land Use**

4. ☒ Y ☒ N Does the public have direct access to the wetland from public roads or waterways? (Circle those that apply.)

5. Is the wetland itself relatively free of obvious human influences, such as:

- a. ☒ Y ☒ N Buildings? e. ☒ Y ☒ N Pollution?
b. ☒ Y ☒ N Roads? f. ☒ Y ☒ N Filling?
c. ☒ Y ☒ N Other structures? g. ☒ Y ☒ N Dredging/draining?
d. ☒ Y ☒ N Trash? h. ☒ Y ☒ N Domination by non-native vegetation?

6. Is the surrounding viewshed relatively free of obvious human influences, such as:

- a. ☒ Y ☒ N Buildings?
b. ☒ Y ☒ N Roads?
c. ☒ Y ☒ N Other structures?

7. ☒ Y ☒ N Is the wetland organized into a variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water)? **This wetland plant community area is part of a larger wetland complex that is organized into a variety of separated areas of similar vegetation.**

8. ☒ Y ☒ N Does the wetland add to the variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water) within the landscape as a whole?

9. Does the wetland encourage exploration because any of the following factors are present:

- a. ☒ Y ☒ N Long views within the wetland?
b. ☒ Y ☒ N Long views in the viewshed adjacent to the wetland?
c. ☒ Y ☒ N Convoluted edges within and/or around the wetland border?
d. ☒ Y ☒ N The wetland provides a different (and perhaps more natural/complex) kind of environment from the surrounding land covers?

10. ☒ Y ☒ N Is the wetland currently being used for (or does it have the potential to be used for) the following recreational activities? (Check all that apply.)

ACTIVITY	CURRENT USE	POTENTIAL USE
Nature study/photography		X
Hiking/biking/skiing		X
Hunting/fishing/trapping		X
Boating/canoeing		
Food harvesting		
Others (list)		

11. ☒ Y ☒ N Is the wetland currently being used, and/or does it have the potential for use for educational or scientific study purposes (circle that which applies)?

Wisconsin Department of Natural Resources

RAPID ASSESSMENT METHODOLOGY FOR EVALUATING WETLAND FUNCTIONAL VALUES

GENERAL INFORMATION

Name of Wetland: Plant Community Area No. 11
Owner(s): City of Waukesha – Tax Key No. WAKC1328996 Waukesha County Parks & Land Use – Tax Key No. WAKT1327996 Christoph Family Trust – Tax Key No. WAKT1327998
Location: Waukesha County; SE ¼ & SW ¼, Section 8, Township 6N, Range 19E
Project Name: Proposed Waukesha West Bypass
Evaluator(s): Donald M. Reed, PhD., Chief Biologist; Lawrence A. Leitner, PhD., Principal Biologist; Christopher J. Jors, Biologist, Southeastern Wisconsin Regional Planning Commission
Date(s) of Site Visit(s): August 30 and November 8, 2011

Description of seasonality limitations of this inspection due to time of year of the evaluation and/or current hydrologic and climatologic conditions (e.g. after heavy rains, snow or ice cover, during drought year, during spring flood, during bird migration): **Precipitation records in 2011 indicate normal to below normal precipitation (0 to -1 inches) for June, below normal (-1 to -2 inches) for July, below normal (-2 to -3 inches) for August, above normal (+1 to +2 inches) for September, below normal (-1 to -2 inches) for October, and normal (-0.5 to +0.5 inches) for November.**

WETLAND DESCRIPTION

Wisconsin Wetlands Inventory classification: S3/E1K
Wetland Type: shallow open water deep marsh <u>shallow marsh</u> seasonally flooded basin bog floodplain forest alder thicket sedge meadow <u>coniferous swamp</u> fen <u>wet meadow</u> <u>shrub-carr</u> <u>low prairie</u> <u>hardwood swamp</u>
Estimated size of wetland in acres: Study area wetland = 8.9 acres

SUMMARY OF FUNCTIONAL VALUES

Based on the results of the attached functional assessment, rate the significance of each of the functional values for the subject wetland and check the appropriate box. Complete the table as a summary.

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	N/A
Floral Diversity			X		
Wildlife Habitat			X		
Fishery Habitat			X		
Flood/Stormwater Attenuation			X		
Water Quality Protection			X		
Shoreline Protection		X			
Groundwater			X		
Aesthetics/Recreation/Education			X		

List any Special Features/"Red Flags": **Part of this plant community area is identified as a Natural Area**

of local significance (NA-3) known as Pebble Creek Wetlands. Longear sunfish (*Lepomis megalotis*), a State-designated Threatened species, has been recorded by the Commission staff just south of CTH D in Pebble Creek. Seaside buttercup (*Ranunculus cymbalaria*), a State-designated Threatened species, was identified by the Commission staff within this plant community area. Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, observed by Commission staff south of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff northwest of this location. In addition, Natural Heritage Inventory (NHI) identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. See page 5 for details.

SITE DESCRIPTION

I. HYDROLOGIC SETTING

A. Describe the geomorphology of the wetland:

- ☐ Depressional (includes slopes, potholes, small lakes, kettles, etc.)
- ☒ Riverine
- ☐ Lake Fringe
- ☐ Extensive Peatland

B. **Y** **N** Has the wetland hydrology been altered by ditching tiles, dams, culverts well pumping, diversion of surface flow or changes to runoff within the watershed (circle those that apply)?
Past CTH D (Sunset Drive) construction through wetland complex impeding & redirecting (ditching) natural flows under CTH D bridge. Fill and a culvert placed at eastern edge of wetland.

C. **Y** **N** Does the wetland have an inlet, outlet, or both (circle those that apply)?
Pebble Creek inlet from north to CTH D bridge outlet to south

D. **Y** **N** Is there any field evidence of wetland hydrology such as buttressed trunks, adventitious roots, drift lines, water marks, water stained leaves, soil mottling, gleying, organic soils layer, or oxidized rhizospheres (circle those that apply)? **Wetland hydrology indicators observed at Sample Site No. 18 include crayfish burrows, geomorphic position, and a positive FAC-Neutral test. At Sample Site No. 20, indicators include saturation at surface, geomorphic position, a positive FAC-Neutral test, and organic soil (muck), a histosol. At Sample Site No. 22, indicators include saturation at the surface, dry season water table at 20 inches, water-stained leaves, and shallow roots and/or buttressing. At Sample Site No. 24, indicators include a high water table at 11 inches below surface, saturation at the surface, water-stained leaves, oxidized rhizospheres on living roots, and a positive FAC-Neutral test.**

E. **Y** **N** Does the wetland have standing water, and if so what is the average depth in inches? Approximately how much of the wetland is inundated?
No standing water observed at sample sites. However, surface water flow within Pebble Creek channel observed. Parts of wetland likely inundated in early growing season.

F. How is the hydroperiod (seasonal water level pattern) of the wetland classified?

- ☐ Permanently Flooded
- ☒ Seasonally Flooded (water absent at end of growing season)
- ☐ Saturated (surface water seldom present)
- ☐ Artificially Flooded
- ☐ Artificially Drained

- G. **Y** **N** Is the wetland a navigable body of water or is a portion of the wetland below the ordinary high-water mark of a navigable water body? List any surface waters associated with the wetland or in proximity to the wetland (note approximate distance from the wetland and navigability determination). Note if there is a surface water connection to other wetlands.

Pebble Creek, which flows through the subject plant community area, is navigable. There is a surface water connection to other wetlands.

II. VEGETATION

- A. Identify the vegetation communities present and the dominant species.

	floating leaved community dominated by:
	submerged aquatic community dominated by:
X	emergent community dominated by: Phalaris arundinacea
X	shrub community dominated by: Salix bebbiana
X	deciduous broad-leaved tree community dominated by: While no tree species were listed as dominant, Fraxinus pennsylvanica, Ulmus Americana, and Acer negundo are present.
	coniferous tree community dominated by:
	open sphagnum mat or bog
X	sedge meadow/wet prairie community dominated by: Carex stricta
	other (explain)

- B. Other plant species identified during site visit:

See attached species list

III. SOILS

- A. NRCS Soil Map Classification: **Lamartine silt loam (LmB) – Somewhat poorly drained; Sebewa silt loam (Sm) – Poorly drained; Palms muck (Pa) - Wet alluvial land (Ww); and Mundelein silt loam (MzfA) – Somewhat poorly drained.**

- B. Field description: **4 Sample Sites recorded in this plant community area – See Sample Site Nos. 18, 20, 22 & 24.**

☐ Organic (histosol)? If so, is it a muck or a peat?

☐ Mineral soil?

- Mottling, gleying, sulfidic materials, iron or manganese concretions, organic streaking (circle those that apply)
- Soil Description:
- Depth of mottling/gleying:
- Depth of A Horizon:
- Munsell Color of matrix and mottles
 - Matrix below the A horizon: --
 - Mottles: --

V. SURROUNDING LAND USES

A. What is the estimated area of the wetland watershed in acres? **126**

B. What are the surrounding land uses?

LAND-USE	ESTIMATED % OF WETLAND WATERSHED
Developed (Industrial/Commercial/Residential)	67%
Agricultural/cropland	1%
Agricultural/grazing	--
Forested (Upland)	<1%
Grassed recreation areas/parks	--
Old field	2%
Highways or roads	2%
Other (specify) : Wetland	28%

VI. SITE SKETCH

See attached aerial map exhibit

FUNCTIONAL ASSESSMENT

The following assessment requires the evaluator to examine site conditions that provide evidence that a given functional value is present and to assess the significance of the wetland to perform those functions. Positive answers to questions indicate the presence of factors important for the function. The questions are not definitive and are only provided to guide the evaluation. After completing each section, the evaluator should consider the factors observed and use best professional judgement to rate the significance. The ratings should be recorded on page 1 of the assessment.

SPECIAL FEATURES/"RED FLAGS"

1. ☒ **Y** ☐ **N** Is the wetland in or adjacent to an area of special natural resource interest (NR 103.04, Wis. Adm. Code)? If so, check those that apply:
 - ☒ Cold water community as defined in s. NR 102.04(3)(b), Wis. Adm. Code, including trout streams, their tributaries, and trout lakes
 - ☐ Lakes Michigan and Superior and the Mississippi River
 - ☐ State or federal designated wild and scenic river
 - ☐ Designated state riverway
 - ☐ Designated state scenic urban waterway
 - ☒ Environmentally sensitive area or environmental corridor identified in an area-wide water quality management plan, special area management plan, special wetland inventory study, or an advanced delineation and identification study – **Part of this plant community area is identified as a Natural Area of local significance (NA-3) known as Pebble Creek Wetlands. Also Primary environmental corridor and ADID wetland**
 - ☐ Calcareous fen
 - ☐ State park, forest, trail or recreation area
 - ☐ State and federal fish and wildlife refuges and fish and wildlife management areas
 - ☐ State or federal designated wilderness area
 - ☐ Designated or dedicated state natural area
 - ☐ Wild rice water listed in ch. NR 19.09, Wis. Adm. Code
 - ☐ Surface water identified as an outstanding or exceptional resource water in ch. NR 102, Wis. Adm. Code
2. ☒ **Y** ☐ **N** According to the Natural Heritage Inventory (Bureau of Endangered Resources) or direct observations, are there any rare, endangered, or threatened plant or animal species in, near, or using the wetland or adjacent lands? If so, list the species of concern: **Longear sunfish (*Lepomis megalotis*), a State-designated Threatened species, has been recorded by the Commission staff just south of CTH D in Pebble Creek. Seaside buttercup (*Ranunculus cymbalaria*), a State-designated Threatened species, was identified by the Commission staff within this plant community area. Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, observed by Commission staff south of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff northwest of this location. In addition, Natural Heritage Inventory (NHI) identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. This broad NHI finding is based upon an 1845 record for this species typically found in dry prairies. Accordingly, it is very unlikely that this plant community area would support this species.**
3. ☐ **Y** ☒ **N** Is the project located in an area that requires a State Coastal Zone Management Plan consistency determination?

Floral Diversity

1. ☒ **Y** ☐ **N** Does the wetland support a variety of native plant species (i.e. not a monotypic stand of cattail or giant reed grass and/or not dominated by exotic species such as reed canary grass, brome grass, buckthorn, purple loosestrife, etc.)?
2. ☐ **Y** ☒ **N** Is the wetland plant community regionally scarce or rare?

Wildlife and Fishery Habitat

1. List any species observed, evidenced (e.g. tracks, scat, nest/burrow, calls), or expected to utilize the wetland: **Northern pike determined by the Commission staff to be a resident fish species in Pebble Creek. Total of 20 species of fish recorded at this location including primary coldwater, secondary coolwater, and warmwater fish assemblages. Macroinvertebrate**

abundance and diversity are indicative of very good water quality in this reach. Raccon, White-tailed deer, passerine birds, marsh birds, waterfowl, and muskrat to utilize this plant community area.

2. ☒ **Y** ☐ **N** Does the wetland contain a number of diverse vegetative cover types and a high degree of interspersed of those vegetation types?
3. ☒ **Y** ☐ **N** Is the estimated ratio of open water to cover between 30 and 70 percent? What is the estimated ratio? **5% - Open water in creek bed**
4. ☒ **Y** ☐ **N** Does the surrounding upland habitat likely support a variety of animal species?
5. ☒ **Y** ☐ **N** Is the wetland part of or associated with a wildlife corridor or designated environmental corridor?
Class I Wildlife Habitat & Primary environmental corridor
6. ☒ **Y** ☐ **N** Is the surrounding habitat and/or the wetland itself a large tract of undeveloped land important for wildlife that requires large home ranges (e.g. bear, woodland passerines)?
7. ☒ **Y** ☐ **N** Is the surrounding habitat and/or the wetland itself a relatively large tract of undeveloped land within an urbanized environment that is important for wildlife?
8. ☒ **Y** ☐ **N** Are there other wetland areas near the subject wetland that may be important to wildlife?
Important wetlands for wildlife along the Pebble Creek corridor.
9. ☒ **Y** ☐ **N** Is the wetland contiguous with a permanent waterbody or periodically inundated for sufficient periods of time to provide spawning/nursery habitat for fish?
Pebble Creek supports a resident population of Northern pike and portions of this area are within the modeled 2-year recurrence interval floodplain which is likely to support spawning habitat.
10. ☒ **Y** ☐ **N** Can the wetland provide significant food base for fish and wildlife (e.g. insects, crustaceans, voles, forage fish, amphibians, reptiles, shrews, wild rice, wild celery, duckweed, pondweeds, watermeal, bulrushes, bur reeds, arrowhead, smartweeds, millets...)?
11. ☒ **Y** ☐ **N** Is the wetland located in a priority watershed/township as identified in the Upper Mississippi and Great Lakes Joint Venture of the North American Waterfowl Management Plan?
12. ☒ **Y** ☐ **N** Is the wetland providing habitat that is scarce to the region?

Flood and Stormwater Storage/Attenuation

1. ☒ **Y** ☐ **N** Are there steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within the watershed (circle those that apply)? **Large impervious areas in developed industrial lands to east and CTH D bordering the south edge of this plant community area. Row crops occur to the west.**
2. ☒ **Y** ☐ **N** Does the wetland significantly reduce run-off velocity due to its size, configuration, braided flow patterns, or vegetation type and density? **Runoff velocity is significantly reduced when stormwater enters the subject wetland**
3. ☒ **Y** ☐ **N** Does the wetland show evidence of flashy water level responses to storm events (debris marks, erosion lines, stormwater inputs, channelized inflow)?
4. ☒ **Y** ☐ **N** Is there a natural feature or human-made structure impeding drainage from the wetland that causes backwater conditions? **CTH D roadbed impedes natural southward flows. Ditches carry these flows to bridge under CTH D.**
5. ☒ **Y** ☐ **N** Considering the size of the wetland area in relation to the size of its watershed, at any time during the year is water likely to reach the wetland's storage capacity (i.e. the level of easily observable wetland vegetation)? [For some cases where greater documentation is required, one should determine if the wetland has capacity to hold 25% of the run-off from a 2 year-24 hour storm event.]

6. ☒ Y ☐ N Considering the location of the wetland in relation to the associated surface water watershed, is the wetland important for attenuating or storing flood or stormwater peaks (i.e. is the wetland located in the mid or lower reaches of the watershed)? **Portions of this area are within the modeled 100-year floodplain and floodway.**

Water Quality Protection

1. ☒ Y ☐ N Does the wetland receive overland flow or direct discharge of stormwater as a primary source of water (circle that which applies)? **Primary source of water contribution to wetland is from Pebble Creek, although stormwater from developed lands to east is significant.**
2. ☒ Y ☐ N Do the surrounding land uses have the potential to deliver significant nutrient and/or sediment loads to the wetland? **Road salt from CTH D and other roads and parking lots to east. Sediments & fertilizers come from agricultural lands to west. Fertilizers come from manicured turf grass to the east.**
3. ☒ Y ☐ N Based on your answers to the flood/stormwater section above, does the wetland perform significant flood/stormwater attenuation (residence time to allow settling)?
4. ☒ Y ☐ N Does the wetland have significant vegetative density to decrease water energy and allow settling of suspended materials?
5. ☒ Y ☐ N Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface water?
6. ☐ Y ☒ N Are algal blooms, heavy macrophyte growth, or other signs of excess nutrient loading to the wetland apparent (or historically reported)?

Shoreline Protection

1. ☒ Y ☐ N Is the wetland in a lake fringe or riverine setting? If NO, STOP and enter "not applicable" for this function. If YES, then answer the applicable questions.
2. ☐ Y ☒ N Is the shoreline exposed to constant wave action caused by long wind fetch or boat traffic?
3. ☒ Y ☐ N Is the shoreline and shallow littoral zone vegetated with submerged or emergent vegetation in the swash zone that decrease wave energy or perennial wetland species that form dense root mats and/or species that have strong stems that are resistant to erosive forces?
4. ☒ Y ☐ N Is the stream bank prone to erosion due to unstable soils, land uses, or ice floes?
5. ☒ Y ☐ N Is the stream bank vegetated with densely rooted shrubs that provide upper bank stability?

Groundwater Recharge and Discharge

1. ☒ Y ☐ N Related to discharge, are there observable (or reported) springs located in the wetland, physical indicators of springs such as marl soil, or vegetation indicators such as watercress or marsh marigold present that tend to indicate the presence of groundwater springs? **Springs reported and observed throughout Pebble Creek watershed**
2. ☒ Y ☐ N Related to discharge, may the wetland contribute to the maintenance of base flow in a stream?
3. ☒ Y ☐ N Related to recharge, is the wetland located on or near a groundwater divide (e.g. a topographic high)? **A large portion of this wetland area is identified in SEWRPC Planning Report No. 52, A Regional Water Supply Plan for Southeastern Wisconsin, Volumes 1 and 2, as having a high groundwater recharge potential (See map).**

Aesthetics/Recreation/Education and Science

1. ☒ **Y** ☒ **N** Is the wetland visible from any of the following kinds of vantage points: roads public lands houses and/or businesses? (Circle all that apply.)
2. ☒ **Y** ☒ **N** Is the wetland in or near any population centers? **City of Waukesha**
3. ☒ **Y** ☒ **N** Is any part of the wetland in public or conservation ownership? **City of Waukesha & Waukesha County Parks & Land Use**
4. ☒ **Y** ☒ **N** Does the public have direct access to the wetland from public roads or waterways? (Circle those that apply.) **Direct access to portion of wetland owned by City of Waukesha & Waukesha County.**
5. Is the wetland itself relatively free of obvious human influences, such as:
 - a. ☒ **Y** ☒ **N** Buildings?
 - b. ☒ **Y** ☒ **N** Roads?
 - c. ☒ **Y** ☒ **N** Other structures?
 - d. ☒ **Y** ☒ **N** Trash?
 - e. ☒ **Y** ☒ **N** Pollution?
 - f. ☒ **Y** ☒ **N** Filling?
 - g. ☒ **Y** ☒ **N** Dredging/drainage?
 - h. ☒ **Y** ☒ **N** Domination by non-native vegetation?
6. Is the surrounding viewshed relatively free of obvious human influences, such as:
 - a. ☒ **Y** ☒ **N** Buildings?
 - b. ☒ **Y** ☒ **N** Roads?
 - c. ☒ **Y** ☒ **N** Other structures?
7. ☒ **Y** ☒ **N** Is the wetland organized into a variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water)?
8. ☒ **Y** ☒ **N** Does the wetland add to the variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water) within the landscape as a whole?
9. Does the wetland encourage exploration because any of the following factors are present:
 - a. ☒ **Y** ☒ **N** Long views within the wetland?
 - b. ☒ **Y** ☒ **N** Long views in the viewshed adjacent to the wetland?
 - c. ☒ **Y** ☒ **N** Convoluted edges within and/or around the wetland border?
 - d. ☒ **Y** ☒ **N** The wetland provides a different (and perhaps more natural/complex) kind of environment from the surrounding land covers?
10. ☒ **Y** ☒ **N** Is the wetland currently being used for (or does it have the potential to be used for) the following recreational activities? (Check all that apply.)

ACTIVITY	CURRENT USE	POTENTIAL USE
Nature study/photography		X
Hiking/biking/skiing		X
Hunting/fishing/trapping		X
Boating/canoeing		X
Food harvesting		
Others (list)		

11. ☒ **Y** ☒ **N** Is the wetland currently being used, and/or does it have the potential for use for educational or scientific study purposes (circle that which applies)?

Wisconsin Department of Natural Resources

RAPID ASSESSMENT METHODOLOGY FOR EVALUATING WETLAND FUNCTIONAL VALUES

GENERAL INFORMATION

Name of Wetland: Plant Community Area No. 12
Owner(s): Christoph Family Trust – Tax Key No. WAKT1327998
Location: Waukesha County; SW ¼, Section 8, Township 6N, Range 19E
Project Name: Proposed Waukesha West Bypass
Evaluator(s): Donald M. Reed, PhD., Chief Biologist; Lawrence A. Leitner, PhD., Principal Biologist; Christopher J. Jors, Biologist, Southeastern Wisconsin Regional Planning Commission
Date(s) of Site Visit(s): November 8 & 15, 2011; April 3, 2012

Description of seasonality limitations of this inspection due to time of year of the evaluation and/or current hydrologic and climatologic conditions (e.g. after heavy rains, snow or ice cover, during drought year, during spring flood, during bird migration): **End of growing season field inspection in 2011 – verified findings at start of growing season in 2012. Precipitation records in 2011 indicate normal to below normal precipitation (0 to -1 inches) for June, below normal (-1 to -2 inches) for July, below normal (-2 to -3 inches) for August, above normal (+1 to +2 inches) for September, below normal (-1 to -2 inches) for October, and normal (-0.5 to +0.5 inches) for November. Precipitation records for 2012 indicate normal precipitation (-0.5 to +0.5 inches) for February and slightly above normal (+0.5 to +1 inches) for March.**

WETLAND DESCRIPTION

Wisconsin Wetlands Inventory classification: FOKf
Wetland Type: shallow open water deep marsh shallow marsh seasonally flooded basin bog floodplain forest alder thicket sedge meadow coniferous swamp fen <u>atypical (farmed) wetland</u> <u>wet meadow</u> shrub-carr low prairie hardwood swamp
Estimated size of wetland in acres: Study area wetland = 11.0 acres

SUMMARY OF FUNCTIONAL VALUES

Based on the results of the attached functional assessment, rate the significance of each of the functional values for the subject wetland and check the appropriate box. Complete the table as a summary.

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	N/A
Floral Diversity	X				
Wildlife Habitat	X				
Fishery Habitat					X
Flood/Stormwater Attenuation	X				
Water Quality Protection	X				
Shoreline Protection					X
Groundwater		X			
Aesthetics/Recreation/Education	X				

SITE DESCRIPTION

I. HYDROLOGIC SETTING

A. Describe the geomorphology of the wetland:

- ☒ Depressional (includes slopes, potholes, small lakes, kettles, etc.)
☐ Riverine
☐ Lake Fringe
☐ Extensive Peatland

B. **(Y)** **(N)** Has the wetland hydrology been altered by ditching, tiles, dams, culverts, well pumping, diversion of surface flow, or changes to runoff within the watershed (circle those that apply)?
Drainage attempts through conversion to agriculture has resulted in lower water levels.

C. **(Y)** **(N)** Does the wetland have an inlet, outlet, or both (circle those that apply)?
Drainage ditch inlet from west; may have a drain tile outlet to east

D. **(Y)** **(N)** Is there any field evidence of wetland hydrology such as buttressed trunks, adventitious roots, drift lines, water marks, water stained leaves, soil mottling, gleying, organic soils layer, or oxidized rhizospheres (circle those that apply)? **Wetland hydrology indicators observed at Sample Site No. 25 include saturation at the surface and a dry-season water table at 15 inches below surface. At Sample Site No. 26, indicators include saturation at surface, inundation visible on aerial imagery, dry-season water table at 19 inches below surface, and geomorphic position. At Sample Site No. 27, indicators include saturation at the surface, inundation visible on aerial imagery, and geomorphic position.**

E. **(Y)** **(N)** Does the wetland have standing water, and if so what is the average depth in inches? Approximately how much of the wetland is inundated?
No standing water observed at sample sites. Parts of wetland inundated in early growing season per aerial imagery.

F. How is the hydroperiod (seasonal water level pattern) of the wetland classified?

- ☐ Permanently Flooded
☐ Seasonally Flooded (water absent at end of growing season)
☒ Saturated (surface water seldom present)
☐ Artificially Flooded
☐ Artificially Drained

G. **(Y)** **(N)** Is the wetland a navigable body of water or is a portion of the wetland below the ordinary high-water mark of a navigable water body? List any surface waters associated with the wetland or in proximity to the wetland (note approximate distance from the wetland and navigability determination). Note if there is a surface water connection to other wetlands. **This plant community area portion of the wetland complex is not part of a navigable body of water. Nor is it below the Ordinary High Water Mark. However, this wetland is part of the larger Pebble Creek wetland complex and is approximately 50 feet from a navigable portion of Pebble Creek.**

II. VEGETATION

A. Identify the vegetation communities present and the dominant species.

	floating leaved community dominated by:
	submerged aquatic community dominated by:
X	emergent community dominated by: Phalaris arundinacea
	shrub community dominated by:
	deciduous broad-leaved tree community dominated by:
	coniferous tree community dominated by:
	open sphagnum mat or bog
	sedge meadow/wet prairie community dominated by:
X	other (explain): Atypical (farmed) wetland – crops rotated, no dominant species

B. Other plant species identified during site visit:

See attached species list

III. SOILS

A. NRCS Soil Map Classification: **Lamartine silt loam (LmB) – Somewhat poorly drained; Sebewa silt loam (Sm) – Poorly drained; and Matherton silt loam (MmA) – Somewhat poorly drained.**

B. Field description: **3 Sample Sites recorded in this plant community area – See Sample Site Nos. 25, 26, 27.**

☐ Organic (histosol)? If so, is it a muck or a peat?

☐ Mineral soil?

- Mottling, gleying, sulfidic materials, iron or manganese concretions, organic streaking (circle those that apply)
- Soil Description:
- Depth of mottling/gleying:
- Depth of A Horizon:
- Munsell Color of matrix and mottles
 - Matrix below the A horizon: --
 - Mottles: --

V. SURROUNDING LAND USES

A. What is the estimated area of the wetland watershed in acres? **30**

B. What are the surrounding land uses?

LAND-USE	ESTIMATED % OF WETLAND WATERSHED
Developed (Industrial/Commercial/Residential)	7%
Agricultural/cropland	51%
Agricultural/grazing	--
Forested (Upland)	--
Grassed recreation areas/parks	--
Old field	
Highways or roads	2%
Other (specify) : Wetland	40%

VI. SITE SKETCH

See attached aerial map exhibit

FUNCTIONAL ASSESSMENT

The following assessment requires the evaluator to examine site conditions that provide evidence that a given functional value is present and to assess the significance of the wetland to perform those functions. Positive answers to questions indicate the presence of factors important for the function. The questions are not definitive and are only provided to guide the evaluation. After completing each section, the evaluator should consider the factors observed and use best professional judgement to rate the significance. The ratings should be recorded on page 1 of the assessment.

SPECIAL FEATURES/"RED FLAGS"

1. ☒ **Y** ☐ **N** Is the wetland in or adjacent to an area of special natural resource interest (NR 103.04, Wis. Adm. Code)? If so, check those that apply:
 - ☐ Cold water community as defined in s. NR 102.04(3)(b), Wis. Adm. Code, including trout streams, their tributaries, and trout lakes
 - ☐ Lakes Michigan and Superior and the Mississippi River
 - ☐ State or federal designated wild and scenic river
 - ☐ Designated state riverway
 - ☐ Designated state scenic urban waterway
 - ☒ Environmentally sensitive area or environmental corridor identified in an area-wide water quality management plan, special area management plan, special wetland inventory study, or an advanced delineation and identification study – **Part of this plant community area is identified as a Primary environmental corridor and ADID wetland.**
 - ☐ Calcareous fen
 - ☐ State park, forest, trail or recreation area
 - ☐ State and federal fish and wildlife refuges and fish and wildlife management areas
 - ☐ State or federal designated wilderness area
 - ☐ Designated or dedicated state natural area
 - ☐ Wild rice water listed in ch. NR 19.09, Wis. Adm. Code
 - ☐ Surface water identified as an outstanding or exceptional resource water in ch. NR 102, Wis. Adm. Code
2. ☒ **Y** ☐ **N** According to the Natural Heritage Inventory (Bureau of Endangered Resources) or direct observations, are there any rare, endangered, or threatened plant or animal species in, near, or using the wetland or adjacent lands? If so, list the species of concern: **Natural Heritage Inventory (NHI) identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. This broad NHI finding is based upon an 1845 record for this species typically found in dry prairies. Accordingly, it is very unlikely that this plant community area would support this species. In addition, other species documented in the area including Blanding's turtle and Butler's garter snake are unlikely to use this actively farmed wetland area.**
3. ☒ **Y** ☐ **N** Is the project located in an area that requires a State Coastal Zone Management Plan consistency determination?

Floral Diversity

1. ☒ **Y** ☐ **N** Does the wetland support a variety of native plant species (i.e. not a monotypic stand of cattail or giant reed grass and/or not dominated by exotic species such as reed canary grass, brome grass, buckthorn, purple loosestrife, etc.)?
2. ☒ **Y** ☐ **N** Is the wetland plant community regionally scarce or rare?

Wildlife and Fishery Habitat

1. List any species observed, evidenced (e.g. tracks, scat, nest/burrow, calls), or expected to utilize the wetland: **White-tailed deer, Raccoon, and various bird species may feed on agricultural crops.**
2. ☒ **Y** ☐ **N** Does the wetland contain a number of diverse vegetative cover types and a high degree of interspersed of those vegetation types?
3. ☒ **Y** ☐ **N** Is the estimated ratio of open water to cover between 30 and 70 percent? What is the estimated ratio? **Temporary inundation during early growing season but no permanent open water or cover**

4. ☒ ☐ Does the surrounding upland habitat likely support a variety of animal species?
5. ☒ ☐ Is the wetland part of or associated with a wildlife corridor or designated environmental corridor?
Primary environmental corridor in part
6. ☒ ☐ Is the surrounding habitat and/or the wetland itself a large tract of undeveloped land important for wildlife that requires large home ranges (e.g. bear, woodland passerines)?
7. ☒ ☐ Is the surrounding habitat and/or the wetland itself a relatively large tract of undeveloped land within an urbanized environment that is important for wildlife?
8. ☒ ☐ Are there other wetland areas near the subject wetland that may be important to wildlife?
Important wetlands for wildlife along the Pebble Creek corridor.
9. ☒ ☐ Is the wetland contiguous with a permanent waterbody or periodically inundated for sufficient periods of time to provide spawning/nursery habitat for fish? **While this wetland is contiguous with the Pebble Creek floodplain-wetland complex, it is actively farmed.**
10. ☒ ☐ Can the wetland provide significant food base for fish and wildlife (e.g. insects, crustaceans, voles, forage fish, amphibians, reptiles, shrews, wild rice, wild celery, duckweed, pondweeds, watermeal, bulrushes, bur reeds, arrowhead, smartweeds, millets...)?
11. ☒ ☐ Is the wetland located in a priority watershed/township as identified in the Upper Mississippi and Great Lakes Joint Venture of the North American Waterfowl Management Plan?
12. ☒ ☐ Is the wetland providing habitat that is scarce to the region?

Flood and Stormwater Storage/Attenuation

1. ☒ ☐ Are there steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within the watershed (circle those that apply)?
2. ☒ ☐ Does the wetland significantly reduce run-off velocity due to its size, configuration, braided flow patterns, or vegetation type and density?
3. ☒ ☐ Does the wetland show evidence of flashy water level responses to storm events (debris marks, erosion lines, stormwater inputs, channelized inflow)?
4. ☒ ☐ Is there a natural feature or human-made structure impeding drainage from the wetland that causes backwater conditions?
5. ☒ ☐ Considering the size of the wetland area in relation to the size of its watershed, at any time during the year is water likely to reach the wetland's storage capacity (i.e. the level of easily observable wetland vegetation)? [For some cases where greater documentation is required, one should determine if the wetland has capacity to hold 25% of the run-off from a 2 year-24 hour storm event.]
6. ☒ ☐ Considering the location of the wetland in relation to the associated surface water watershed, is the wetland important for attenuating or storing flood or stormwater peaks (i.e. is the wetland located in the mid or lower reaches of the watershed)? **The eastern portion of this plant community area is contained within the 100-year floodplain & floodway.**

Water Quality Protection

1. ☒ ☐ Does the wetland receive overland flow or direct discharge of stormwater as a primary source of water (circle that which applies)?
2. ☒ ☐ Do the surrounding land uses have the potential to deliver significant nutrient and/or sediment loads to the wetland? **Sediments & fertilizers from agricultural lands.**

3. **Y**(**N**) Based on your answers to the flood/stormwater section above, does the wetland perform significant flood/stormwater attenuation (residence time to allow settling)?
4. **Y**(**N**) Does the wetland have significant vegetative density to decrease water energy and allow settling of suspended materials?
5. **Y**(**N**) Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface water?
6. **Y**(**N**) Are algal blooms, heavy macrophyte growth, or other signs of excess nutrient loading to the wetland apparent (or historically reported)?

Shoreline Protection

1. **Y**(**N**) Is the wetland in a lake fringe or riverine setting? If NO, STOP and enter "not applicable" for this function. If YES, then answer the applicable questions. **This wetland plant community area is located along the western edge of a wetland-floodplain complex associated with Pebble Creek.**
2. **Y**(**N**) Is the shoreline exposed to constant wave action caused by long wind fetch or boat traffic?
3. **Y**(**N**) Is the shoreline and shallow littoral zone vegetated with submerged or emergent vegetation in the swash zone that decrease wave energy or perennial wetland species that form dense root mats and/or species that have strong stems that are resistant to erosive forces? **This wetland plant community area is part of a wetland complex that provides this function.**
4. **Y**(**N**) Is the stream bank prone to erosion due to unstable soils, land uses, or ice floes? **This wetland plant community area is part of a wetland complex, the shoreline edge of which may experience ice flows.**
5. **Y**(**N**) Is the stream bank vegetated with densely rooted shrubs that provide upper bank stability? **This wetland plant community area is part of a wetland complex that provides this function.**

Groundwater Recharge and Discharge

1. **Y**(**N**) Related to discharge, are there observable (or reported) springs located in the wetland, physical indicators of springs such as marl soil, or vegetation indicators such as watercress or marsh marigold present that tend to indicate the presence of groundwater springs? **Sloped wetlands indicative of groundwater seepage.**
2. **Y**(**N**) Related to discharge, may the wetland contribute to the maintenance of base flow in a stream?
3. **Y**(**N**) Related to recharge, is the wetland located on or near a groundwater divide (e.g. a topographic high)? **This plant community area is identified in SEWRPC Planning Report No. 52, A Regional Water Supply Plan for Southeastern Wisconsin, Volumes 1 and 2, as having a high groundwater recharge potential (See map).**

Aesthetics/Recreation/Education and Science

1. **Y**(**N**) Is the wetland visible from any of the following kinds of vantage points: **roads**, **public lands**, **houses**, and/or **businesses**? (Circle all that apply.)
2. **Y**(**N**) Is the wetland in or near any population centers? **City of Waukesha**
3. **Y**(**N**) Is any part of the wetland in public or conservation ownership?

4. ☒ Y ☒ N Does the public have direct access to the wetland from public roads or waterways? (Circle those that apply.)
5. Is the wetland itself relatively free of obvious human influences, such as:
- a. ☒ Y ☒ N Buildings?
 - b. ☒ Y ☒ N Roads?
 - c. ☒ Y ☒ N Other structures?
 - d. ☒ Y ☒ N Trash?
 - e. ☒ Y ☒ N Pollution?
 - f. ☒ Y ☒ N Filling?
 - g. ☒ Y ☒ N Dredging/drainage?
 - h. ☒ Y ☒ N Domination by non-native vegetation?
6. Is the surrounding viewshed relatively free of obvious human influences, such as:
- a. ☒ Y ☒ N Buildings?
 - b. ☒ Y ☒ N Roads?
 - c. ☒ Y ☒ N Other structures?
7. ☒ Y ☒ N Is the wetland organized into a variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water)?
8. ☒ Y ☒ N Does the wetland add to the variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water) within the landscape as a whole?
9. Does the wetland encourage exploration because any of the following factors are present:
- a. ☒ Y ☒ N Long views within the wetland?
 - b. ☒ Y ☒ N Long views in the viewshed adjacent to the wetland?
 - c. ☒ Y ☒ N Convoluted edges within and/or around the wetland border?
 - d. ☒ Y ☒ N The wetland provides a different (and perhaps more natural/complex) kind of environment from the surrounding land covers?
10. ☒ Y ☒ N Is the wetland currently being used for (or does it have the potential to be used for) the following recreational activities? (Check all that apply.) **Entirely in private ownership with no indication that agriculture will cease.**

ACTIVITY	CURRENT USE	POTENTIAL USE
Nature study/photography		
Hiking/biking/skiing		
Hunting/fishing/trapping		
Boating/canoeing		
Food harvesting		
Others (list)		

11. ☒ Y ☒ N Is the wetland currently being used, and/or does it have the potential for use for educational or scientific study purposes (circle that which applies)?

Wisconsin Department of Natural Resources

RAPID ASSESSMENT METHODOLOGY FOR EVALUATING WETLAND FUNCTIONAL VALUES

GENERAL INFORMATION

Name of Wetland: Plant Community Area No. 13
Owner(s): Christoph Family Trust – Tax Key No. WAKT1327998
Location: Waukesha County; SW ¼, Section 8 & SE¼, Section 7, Township 6N, Range 19E
Project Name: Proposed Waukesha West Bypass
Evaluator(s): Donald M. Reed, PhD., Chief Biologist; Lawrence A. Leitner, PhD., Principal Biologist; Christopher J. Jors, Biologist, Southeastern Wisconsin Regional Planning Commission
Date(s) of Site Visit(s): November 15, 2011; April 3, 2012

Description of seasonality limitations of this inspection due to time of year of the evaluation and/or current hydrologic and climatologic conditions (e.g. after heavy rains, snow or ice cover, during drought year, during spring flood, during bird migration): **End of growing season field inspection in 2011 – verified findings at start of growing season in 2012. Precipitation records in 2011 indicate normal to below normal precipitation (0 to -1 inches) for June, below normal (-1 to -2 inches) for July, below normal (-2 to -3 inches) for August, above normal (+1 to +2 inches) for September, below normal (-1 to -2 inches) for October, and normal (-0.5 to +0.5 inches) for November. Precipitation records for 2012 indicate normal precipitation (-0.5 to +0.5 inches) for February and slightly above normal (+0.5 to +1 inches) for March.**

WETLAND DESCRIPTION

Wisconsin Wetlands Inventory classification: FOKf
Wetland Type: shallow open water deep marsh shallow marsh seasonally flooded basin bog floodplain forest alder thicket sedge meadow coniferous swamp fen <u>atypical (farmed) wetland</u> wet meadow shrub-carr low prairie hardwood swamp
Estimated size of wetland in acres: Study area wetland = 10.6 acres

SUMMARY OF FUNCTIONAL VALUES

Based on the results of the attached functional assessment, rate the significance of each of the functional values for the subject wetland and check the appropriate box. Complete the table as a summary.

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	N/A
Floral Diversity	X				
Wildlife Habitat	X				
Fishery Habitat					X
Flood/Stormwater Attenuation	X				
Water Quality Protection	X				
Shoreline Protection					X
Groundwater		X			
Aesthetics/Recreation/Education	X				

List any Special Features/"Red Flags": **See page 5.**

SITE DESCRIPTION

I. HYDROLOGIC SETTING

A. Describe the geomorphology of the wetland:

- ☒ Depressional (includes slopes, potholes, small lakes, kettles, etc.)
☐ Riverine
☐ Lake Fringe
☐ Extensive Peatland

B. **(Y)N** Has the wetland hydrology been altered by ditching, tiles, dams, culverts, well pumping, diversion of surface flow, or changes to runoff within the watershed (circle those that apply)?
Drainage attempts through conversion to agriculture has resulted in lower water levels.

C. **(Y)N** Does the wetland have an inlet, outlet, or both (circle those that apply)?
Drainage swale inlet from southwest; outlet at culvert under tracks to north.

D. **(Y)N** Is there any field evidence of wetland hydrology such as buttressed trunks, adventitious roots, drift lines, water marks, water stained leaves, soil mottling, gleying, organic soils layer, or oxidized rhizospheres (circle those that apply)? **Wetland hydrology indicators observed at Sample Site No. 29 include saturation at the surface, inundation visible on aerial imagery, and a dry-season water table at 17 inches below surface. At Sample Site No. 31 indicators include saturation at 6 inches below the surface, inundation visible on aerial imagery, dry-season water table at 17.5 inches below surface, and geomorphic position. At Sample Site No. 32 indicators include saturation at 2 inches below the surface, inundation visible on aerial imagery, dry-season water table at 20 inches below the surface, and geomorphic position. At Sample Site No. 34 indicators include saturation at the surface, a dry-season water table at 21 inches below surface, geomorphic position, and a positive FAC-Neutral test. At Sample Site No. 36 indicators include inundation visible on aerial imagery. At Sample Site No. 37 indicators include inundation visible on aerial imagery and geomorphic position.**

E. **(Y)N** Does the wetland have standing water, and if so what is the average depth in inches? Approximately how much of the wetland is inundated?
No standing water observed at sample sites. Parts of wetland inundated in early growing season per aerial imagery.

F. How is the hydroperiod (seasonal water level pattern) of the wetland classified?

- ☐ Permanently Flooded
☐ Seasonally Flooded (water absent at end of growing season)
☒ Saturated (surface water seldom present)
☐ Artificially Flooded
☐ Artificially Drained

G. **(Y)N** Is the wetland a navigable body of water or is a portion of the wetland below the ordinary high-water mark of a navigable water body? List any surface waters associated with the wetland or in proximity to the wetland (note approximate distance from the wetland and navigability determination). Note if there is a surface water connection to other wetlands. **This plant community area portion of the wetland complex is not part of a navigable body of water. Nor is it below the Ordinary High Water Mark. However, this wetland is part of the larger Pebble Creek wetland complex and is approximately 200 feet from a navigable portion of Pebble Creek.**

II. VEGETATION

A. Identify the vegetation communities present and the dominant species.

	floating leaved community dominated by:
	submerged aquatic community dominated by:
	emergent community dominated by:
	shrub community dominated by:
	deciduous broad-leaved tree community dominated by:
	coniferous tree community dominated by:
	open sphagnum mat or bog
	sedge meadow/wet prairie community dominated by:
X	other (explain): Atypical (farmed) wetland with Panicum dichotomiflorum as a dominant species

B. Other plant species identified during site visit:

See attached species list

III. SOILS

A. NRCS Soil Map Classification: **Matherton silt loam (MmA) – Somewhat poorly drained; Lamartine silt loam (LmB) – Somewhat poorly drained; Sebewa silt loam (Sm) – Poorly drained; Casco loam (CeB) – Well drained; Fox silt loam (FsB) – Well drained; Hochheim loam (HmB2) – Well drained; and Warsaw loam (WeA) – Well drained.**

B. Field description: **6 Sample Sites recorded in this plant community area – See Sample Site Nos. 29, 31, 32, 34, 36, and 37.**

☐ Organic (histosol)? If so, is it a muck or a peat?

☐ Mineral soil?

- Mottling, gleying, sulfidic materials, iron or manganese concretions, organic streaking (circle those that apply)
- Soil Description:
- Depth of mottling/gleying:
- Depth of A Horizon:
- Munsell Color of matrix and mottles
 - Matrix below the A horizon: --
 - Mottles: --

V. SURROUNDING LAND USES

A. What is the estimated area of the wetland watershed in acres? **29**

B. What are the surrounding land uses?

LAND-USE	ESTIMATED % OF WETLAND WATERSHED
Developed (Industrial/Commercial/Residential)	6%
Agricultural/cropland	55%
Agricultural/grazing	--
Forested (Upland)	--
Grassed recreation areas/parks	--
Old field	--
Highways & railroads	2%
Other (specify) : Wetland	37%

VI. SITE SKETCH

See attached aerial map exhibit

FUNCTIONAL ASSESSMENT

The following assessment requires the evaluator to examine site conditions that provide evidence that a given functional value is present and to assess the significance of the wetland to perform those functions. Positive answers to questions indicate the presence of factors important for the function. The questions are not definitive and are only provided to guide the evaluation. After completing each section, the evaluator should consider the factors observed and use best professional judgement to rate the significance. The ratings should be recorded on page 1 of the assessment.

SPECIAL FEATURES/"RED FLAGS"

1. ☒ **Y** ☐ **N** Is the wetland in or adjacent to an area of special natural resource interest (NR 103.04, Wis. Adm. Code)? If so, check those that apply:
 - ☐ Cold water community as defined in s. NR 102.04(3)(b), Wis. Adm. Code, including trout streams, their tributaries, and trout lakes
 - ☐ Lakes Michigan and Superior and the Mississippi River
 - ☐ State or federal designated wild and scenic river
 - ☐ Designated state riverway
 - ☐ Designated state scenic urban waterway
 - ☒ Environmentally sensitive area or environmental corridor identified in an area-wide water quality management plan, special area management plan, special wetland inventory study, or an advanced delineation and identification study – **Part of this plant community area is identified as a Primary environmental corridor and ADID wetland.**
 - ☐ Calcareous fen
 - ☐ State park, forest, trail or recreation area
 - ☐ State and federal fish and wildlife refuges and fish and wildlife management areas
 - ☐ State or federal designated wilderness area
 - ☐ Designated or dedicated state natural area
 - ☐ Wild rice water listed in ch. NR 19.09, Wis. Adm. Code
 - ☐ Surface water identified as an outstanding or exceptional resource water in ch. NR 102, Wis. Adm. Code
2. ☒ **Y** ☐ **N** According to the Natural Heritage Inventory (Bureau of Endangered Resources) or direct observations, are there any rare, endangered, or threatened plant or animal species in, near, or using the wetland or adjacent lands? If so, list the species of concern: **Natural Heritage Inventory (NHI) identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. This broad NHI finding is based upon an 1845 record for this species typically found in dry prairies. Accordingly, it is very unlikely that this plant community area would support this species. In addition, other species documented in the area including Blanding's turtle and Butler's garter snake are unlikely to use this actively farmed wetland area.**
3. ☒ **Y** ☐ **N** Is the project located in an area that requires a State Coastal Zone Management Plan consistency determination?

Floral Diversity

1. ☒ **Y** ☐ **N** Does the wetland support a variety of native plant species (i.e. not a monotypic stand of cattail or giant reed grass and/or not dominated by exotic species such as reed canary grass, brome grass, buckthorn, purple loosestrife, etc.)?
2. ☒ **Y** ☐ **N** Is the wetland plant community regionally scarce or rare?

Wildlife and Fishery Habitat

1. List any species observed, evidenced (e.g. tracks, scat, nest/burrow, calls), or expected to utilize the wetland: **White-tailed deer, Raccoon, and various bird species may feed on agricultural crops.**
2. ☒ **Y** ☐ **N** Does the wetland contain a number of diverse vegetative cover types and a high degree of interspersed of those vegetation types?
3. ☒ **Y** ☐ **N** Is the estimated ratio of open water to cover between 30 and 70 percent? What is the estimated ratio? **Portions of this wetland plant community area are often temporarily inundated during the early growing season. But no permanent open water occurs in this plant community area.**

4. ☒ ☐ Does the surrounding upland habitat likely support a variety of animal species?
5. ☒ ☐ Is the wetland part of or associated with a wildlife corridor or designated environmental corridor?
Primary environmental corridor in part
6. ☒ ☐ Is the surrounding habitat and/or the wetland itself a large tract of undeveloped land important for wildlife that requires large home ranges (e.g. bear, woodland passerines)?
7. ☒ ☐ Is the surrounding habitat and/or the wetland itself a relatively large tract of undeveloped land within an urbanized environment that is important for wildlife?
8. ☒ ☐ Are there other wetland areas near the subject wetland that may be important to wildlife?
Important wetlands for wildlife along the Pebble Creek corridor.
9. ☒ ☐ Is the wetland contiguous with a permanent waterbody or periodically inundated for sufficient periods of time to provide spawning/nursery habitat for fish? **While this wetland is contiguous with the Pebble Creek floodplain-wetland complex, it is actively farmed.**
10. ☒ ☐ Can the wetland provide significant food base for fish and wildlife (e.g. insects, crustaceans, voles, forage fish, amphibians, reptiles, shrews, wild rice, wild celery, duckweed, pondweeds, watermeal, bulrushes, bur reeds, arrowhead, smartweeds, millets...)?
11. ☒ ☐ Is the wetland located in a priority watershed/township as identified in the Upper Mississippi and Great Lakes Joint Venture of the North American Waterfowl Management Plan?
12. ☒ ☐ Is the wetland providing habitat that is scarce to the region?

Flood and Stormwater Storage/Attenuation

1. ☒ ☐ Are there steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within the watershed (circle those that apply)?
2. ☒ ☐ Does the wetland significantly reduce run-off velocity due to its size, configuration, braided flow patterns, or vegetation type and density?
3. ☒ ☐ Does the wetland show evidence of flashy water level responses to storm events (debris marks, erosion lines, stormwater inputs, channelized inflow)?
4. ☒ ☐ Is there a natural feature or human-made structure impeding drainage from the wetland that causes backwater conditions? **Railroad bed impedes natural drainage to north.**
5. ☒ ☐ Considering the size of the wetland area in relation to the size of its watershed, at any time during the year is water likely to reach the wetland's storage capacity (i.e. the level of easily observable wetland vegetation)? [For some cases where greater documentation is required, one should determine if the wetland has capacity to hold 25% of the run-off from a 2 year-24 hour storm event.]
6. ☒ ☐ Considering the location of the wetland in relation to the associated surface water watershed, is the wetland important for attenuating or storing flood or stormwater peaks (i.e. is the wetland located in the mid or lower reaches of the watershed)? **The eastern portion of this plant community area is contained within the 100-year floodplain.**

Water Quality Protection

1. ☒ ☐ Does the wetland receive overland flow or direct discharge of stormwater as a primary source of water (circle that which applies)?
2. ☒ ☐ Do the surrounding land uses have the potential to deliver significant nutrient and/or sediment loads to the wetland? **Sediments & fertilizers from agricultural lands.**

3. **Y**(**N**) Based on your answers to the flood/stormwater section above, does the wetland perform significant flood/stormwater attenuation (residence time to allow settling)? **This plant community area is actively farmed.**
4. **Y**(**N**) Does the wetland have significant vegetative density to decrease water energy and allow settling of suspended materials?
5. **Y**(**N**) Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface water?
6. **Y**(**N**) Are algal blooms, heavy macrophyte growth, or other signs of excess nutrient loading to the wetland apparent (or historically reported)?

Shoreline Protection

1. **Y**(**N**) Is the wetland in a lake fringe or riverine setting? If NO, STOP and enter "not applicable" for this function. If YES, then answer the applicable questions. **This wetland plant community area is located along the western edge of a wetland-floodplain complex associated with Pebble Creek.**
2. **Y**(**N**) Is the shoreline exposed to constant wave action caused by long wind fetch or boat traffic?
3. **Y**(**N**) Is the shoreline and shallow littoral zone vegetated with submerged or emergent vegetation in the swash zone that decrease wave energy or perennial wetland species that form dense root mats and/or species that have strong stems that are resistant to erosive forces? **This wetland plant community area is part of a wetland complex that provides this function.**
4. **Y**(**N**) Is the stream bank prone to erosion due to unstable soils, land uses, or ice floes? **This wetland plant community area is part of a wetland complex, the shoreline edge of which may experience ice flows.**
5. **Y**(**N**) Is the stream bank vegetated with densely rooted shrubs that provide upper bank stability? **This wetland plant community area is part of a wetland complex that provides this function.**

Groundwater Recharge and Discharge

1. **Y**(**N**) Related to discharge, are there observable (or reported) springs located in the wetland, physical indicators of springs such as marl soil, or vegetation indicators such as watercress or marsh marigold present that tend to indicate the presence of groundwater springs? **Sloped wetlands indicative of groundwater seepage.**
2. **Y**(**N**) Related to discharge, may the wetland contribute to the maintenance of base flow in a stream?
3. **Y**(**N**) Related to recharge, is the wetland located on or near a groundwater divide (e.g. a topographic high)? **This plant community area is identified in SEWRPC Planning Report No. 52, A Regional Water Supply Plan for Southeastern Wisconsin, Volumes 1 and 2, as having a high groundwater recharge potential (See map).**

Aesthetics/Recreation/Education and Science

1. **Y**(**N**) Is the wetland visible from any of the following kinds of vantage points: **roads**, **public lands**, **houses**, and/or **businesses**? (Circle all that apply.)
2. **Y**(**N**) Is the wetland in or near any population centers? **City of Waukesha**
3. **Y**(**N**) Is any part of the wetland in public or conservation ownership?

4. Y ☒ N Does the public have direct access to the wetland from public roads or waterways? (Circle those that apply.)

5. Is the wetland itself relatively free of obvious human influences, such as:

- a. Y ☒ N Buildings? e. Y ☒ N Pollution?
b. Y ☒ N Roads? f. Y ☒ N Filling?
c. Y ☒ N Other structures? g. Y ☒ N Dredging/drainage?
d. Y ☒ N Trash? h. Y ☒ N Domination by non-native vegetation?

Other structures includes the railroad on the north side of the wetland.

6. Is the surrounding viewshed relatively free of obvious human influences, such as:

- a. Y ☒ N Buildings?
b. Y ☒ N Roads?
c. Y ☒ N Other structures?

7. Y ☒ N Is the wetland organized into a variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water)?

8. Y ☒ N Does the wetland add to the variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water) within the landscape as a whole?

9. Does the wetland encourage exploration because any of the following factors are present:

- a. Y ☒ N Long views within the wetland?
b. Y ☒ N Long views in the viewshed adjacent to the wetland?
c. Y ☒ N Convoluted edges within and/or around the wetland border?
d. Y ☒ N The wetland provides a different (and perhaps more natural/complex) kind of environment from the surrounding land covers?

10. Y ☒ N Is the wetland currently being used for (or does it have the potential to be used for) the following recreational activities? (Check all that apply.) **This plant community area is entirely in private ownership with no indication that agriculture will cease.**

ACTIVITY	CURRENT USE	POTENTIAL USE
Nature study/photography		
Hiking/biking/skiing		
Hunting/fishing/trapping		
Boating/canoeing		
Food harvesting		
Others (list)		

11. Y ☒ N Is the wetland currently being used, and/or does it have the potential for use for educational or scientific study purposes (circle that which applies)?

Wisconsin Department of Natural Resources

RAPID ASSESSMENT METHODOLOGY FOR EVALUATING WETLAND FUNCTIONAL VALUES

GENERAL INFORMATION

Name of Wetland: Plant Community Area No. 14
Owner(s): State of Wisconsin Dept. of Natural Resources - Tax Key No. WAKC1329988
Location: Waukesha County; SE ¼ Section 7, Township 6N, Range 19E
Project Name: Proposed Waukesha West Bypass
Evaluator(s): Donald M. Reed, PhD., Chief Biologist; Lawrence A. Leitner, PhD., Principal Biologist; Christopher J. Jors, Biologist, Southeastern Wisconsin Regional Planning Commission
Date(s) of Site Visit(s): August 30, 2011

Description of seasonality limitations of this inspection due to time of year of the evaluation and/or current hydrologic and climatologic conditions (e.g. after heavy rains, snow or ice cover, during drought year, during spring flood, during bird migration): **Precipitation records in 2011 indicate normal to below normal precipitation (0 to -1 inches) for June, below normal (-1 to -2 inches) for July, and below normal (-2 to -3 inches) for August.**

WETLAND DESCRIPTION

Wisconsin Wetlands Inventory classification: S3/E2K
Wetland Type: shallow open water deep marsh shallow marsh seasonally flooded basin bog floodplain forest alder thicket sedge meadow coniferous swamp fen wet meadow shrub-carr <u>low prairie</u> hardwood swamp
Estimated size of wetland in acres: Study area wetland = 0.3 acres

SUMMARY OF FUNCTIONAL VALUES

Based on the results of the attached functional assessment, rate the significance of each of the functional values for the subject wetland and check the appropriate box. Complete the table as a summary.

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	N/A
Floral Diversity			X		
Wildlife Habitat		X			
Fishery Habitat	X				
Flood/Stormwater Attenuation		X			
Water Quality Protection	X				
Shoreline Protection	X				
Groundwater		X			
Aesthetics/Recreation/Education			X		

List any Special Features/"Red Flags": **This plant community area is identified as a Natural Area of local significance (NA-3) known as Pebble Creek Railroad Prairie. Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, was observed by Commission staff south of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff northwest of this location. In addition, Natural**

Heritage Inventory (NHI) identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. See page 5 for details.

SITE DESCRIPTION

I. HYDROLOGIC SETTING

A. Describe the geomorphology of the wetland:

- ☒ Depressional (includes slopes, potholes, small lakes, kettles, etc.)
☐ Riverine
☐ Lake Fringe
☐ Extensive Peatland

B. **(Y)** **(N)** Has the wetland hydrology been altered by ditching, tiles, dams, culverts, well pumping, diversion of surface flow, or changes to runoff within the watershed (circle those that apply)?
Old fill at Railroad and bike trail interrupted natural flows from south to Pebble Creek

C. **(Y)** **(N)** Does the wetland have an inlet, outlet, or both (circle those that apply)?
East of the plant community area, a culvert under the railroad and under the bike trail carries flows from lands south of the railroad to Pebble Creek to the north.

D. **(Y)** **(N)** Is there any field evidence of wetland hydrology such as buttressed tree trunks, adventitious roots, drift lines, water marks, water stained leaves, soil mottling/gleying, organic soils layer, or oxidized rhizospheres (circle those that apply)? **Low-lying area supporting low prairie plants.**

E. **(Y)** **(N)** Does the wetland have standing water, and if so what is the average depth in inches? Approximately how much of the wetland is inundated?
No standing water observed during field inspection. However, parts of wetland likely inundated in early growing season.

F. How is the hydroperiod (seasonal water level pattern) of the wetland classified?

- ☐ Permanently Flooded
☒ Seasonally Flooded (water absent at end of growing season)
☐ Saturated (surface water seldom present)
☐ Artificially Flooded
☐ Artificially Drained

G. **(Y)** **(N)** Is the wetland a navigable body of water or is a portion of the wetland below the ordinary high-water mark of a navigable water body? List any surface waters associated with the wetland or in proximity to the wetland (note approximate distance from the wetland and navigability determination). Note if there is a surface water connection to other wetlands. **This plant community area is not part of a navigable body of water. Nor is it below the Ordinary High Water Mark. However, this wetland drains eastward and then northward through a culvert under the Bike Trail and then north to Pebble Creek. The plant community area is about 300 feet from the navigable portion of Pebble Creek.**

II. VEGETATION

A. Identify the vegetation communities present and the dominant species.

	floating leaved community dominated by:
	submerged aquatic community dominated by:
	emergent community dominated by:
	shrub community dominated by:
	deciduous broad-leaved tree community dominated by:
	coniferous tree community dominated by:
	open sphagnum mat or bog
X	sedge meadow/wet prairie community dominated by: Andropogon gerardii and Dipsacus laciniatus
	other (explain)

B. Other plant species identified during site visit:

See attached species list

III. SOILS

A. NRCS Soil Map Classification: **Matherton silt loam (MmA) – Somewhat poorly drained; and Sebewa silt loam (Sm) – Poorly drained**

B. Field description: **None recorded**

☐ Organic (histosol)? If so, is it a muck or a peat?

☐ Mineral soil?

- Mottling, gleying, sulfidic materials, iron or manganese concretions, organic streaking (circle those that apply)
- Soil Description:
- Depth of mottling/gleying:
- Depth of A Horizon:
- Munsell Color of matrix and mottles
 - Matrix below the A horizon:
 - Mottles:

V. SURROUNDING LAND USES

A. What is the estimated area of the wetland watershed in acres? 1

B. What are the surrounding land uses?

LAND-USE	ESTIMATED % OF WETLAND WATERSHED
Developed (Industrial/Commercial/Residential)	--
Agricultural/cropland	--
Agricultural/grazing	--
Upland prairie	35%
Grassed recreation areas/parks	--
Old field	--
Highways, roads, railroads	35%
Other (specify) : Wetland	30%

VI. SITE SKETCH

See attached aerial map exhibit

FUNCTIONAL ASSESSMENT

The following assessment requires the evaluator to examine site conditions that provide evidence that a given functional value is present and to assess the significance of the wetland to perform those functions. Positive answers to questions indicate the presence of factors important for the function. The questions are not definitive and are only provided to guide the evaluation. After completing each section, the evaluator should consider the factors observed and use best professional judgement to rate the significance. The ratings should be recorded on page 1 of the assessment.

SPECIAL FEATURES/"RED FLAGS"

1. ☒ **Y** ☐ **N** Is the wetland in or adjacent to an area of special natural resource interest (NR 103.04, Wis. Adm. Code)? If so, check those that apply:
 - ☐ Cold water community as defined in s. NR 102.04(3)(b), Wis. Adm. Code, including trout streams, their tributaries, and trout lakes
 - ☐ Lakes Michigan and Superior and the Mississippi River
 - ☐ State or federal designated wild and scenic river
 - ☐ Designated state riverway
 - ☐ Designated state scenic urban waterway
 - ☒ Environmentally sensitive area or environmental corridor identified in an area-wide water quality management plan, special area management plan, special wetland inventory study, or an advanced delineation and identification study – **Subject plant community area identified as a Natural Area of local significance (NA-3) known as the Pebble Creek Railroad Prairie; contained entirely within a Primary environmental corridor; and ADID wetland**
 - ☐ Calcareous fen
 - ☐ State park, forest, trail or recreation area
 - ☐ State and federal fish and wildlife refuges and fish and wildlife management areas
 - ☐ State or federal designated wilderness area
 - ☐ Designated or dedicated state natural area
 - ☐ Wild rice water listed in ch. NR 19.09, Wis. Adm. Code
 - ☐ Surface water identified as an outstanding or exceptional resource water in ch. NR 102, Wis. Adm. Code
2. ☒ **Y** ☐ **N** According to the Natural Heritage Inventory (Bureau of Endangered Resources) or direct observations, are there any rare, endangered, or threatened plant or animal species in, near, or using the wetland or adjacent lands? If so, list the species of concern: **Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, observed by Commission staff south of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff northwest of this location. In addition, Natural Heritage Inventory (NHI) identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. This broad NHI finding is based upon an 1845 record for this species typically found in dry prairies. Accordingly, it is very unlikely that this plant community area would support this species.**
3. ☐ **Y** ☒ **N** Is the project located in an area that requires a State Coastal Zone Management Plan consistency determination?

Floral Diversity

1. ☒ **Y** ☐ **N** Does the wetland support a variety of native plant species (i.e. not a monotypic stand of cattail or giant reed grass and/or not dominated by exotic species such as reed canary grass, brome grass, buckthorn, purple loosestrife, etc.)?
2. ☒ **Y** ☐ **N** Is the wetland plant community regionally scarce or rare? **Much of pre-settlement wet to wet-mesic prairie occurring in this area has been drained and converted to agricultural uses.**

Wildlife and Fishery Habitat

1. List any species observed, evidenced (e.g. tracks, scat, nest/burrow, calls), or expected to utilize the wetland: **Songbirds utilize this plant community area.**
2. ☐ **Y** ☒ **N** Does the wetland contain a number of diverse vegetative cover types and a high degree of interspersed of those vegetation types?

3. ☒ ☐ Is the estimated ratio of open water to cover between 30 and 70 percent? What is the estimated ratio? **Inundation is limited to early growing season.**
4. ☒ ☐ Does the surrounding upland habitat likely support a variety of animal species?
5. ☒ ☐ Is the wetland part of or associated with a wildlife corridor or designated environmental corridor?
Primary environmental corridor
6. ☒ ☐ Is the surrounding habitat and/or the wetland itself a large tract of undeveloped land important for wildlife that requires large home ranges (e.g. bear, woodland passerines)?
7. ☒ ☐ Is the surrounding habitat and/or the wetland itself a relatively large tract of undeveloped land within an urbanized environment that is important for wildlife?
8. ☒ ☐ Are there other wetland areas near the subject wetland that may be important to wildlife?
Important wetlands for wildlife along the Pebble Creek corridor
9. ☒ ☐ Is the wetland contiguous with a permanent waterbody or periodically inundated for sufficient periods of time to provide spawning/nursery habitat for fish? **This plant community area is located just south of and connected via a culvert to the Pebble Creek wetland complex that provides this function.**
10. ☒ ☐ Can the wetland provide significant food base for fish and wildlife (e.g. insects, crustaceans, voles, forage fish, amphibians, reptiles, shrews) wild rice, wild celery, duckweed, pondweeds, watermeal, bulrushes, bur reeds, arrowhead, smartweeds, millets...)?
11. ☒ ☐ Is the wetland located in a priority watershed/township as identified in the Upper Mississippi and Great Lakes Joint Venture of the North American Waterfowl Management Plan?
12. ☒ ☐ Is the wetland providing habitat that is scarce to the region?

Flood and Stormwater Storage/Attenuation

1. ☒ ☐ Are there steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within the watershed (circle those that apply)? **Impervious paved surfaces include CTH TT & the bike trail**
2. ☒ ☐ Does the wetland significantly reduce run-off velocity due to its size, configuration, braided flow patterns, or vegetation type and density? **Small size and somewhat isolated**
3. ☒ ☐ Does the wetland show evidence of flashy water level responses to storm events (debris marks, erosion lines, stormwater inputs, channelized inflow)?
4. ☒ ☐ Is there a natural feature or human-made structure impeding drainage from the wetland that causes backwater conditions? **Bike Trail**
5. ☒ ☐ Considering the size of the wetland area in relation to the size of its watershed, at any time during the year is water likely to reach the wetland's storage capacity (i.e. the level of easily observable wetland vegetation)? [For some cases where greater documentation is required, one should determine if the wetland has capacity to hold 25% of the run-off from a 2 year-24 hour storm event.] **But it is important to note that part of this wetland is located within the modeled 100-year floodplain.**
6. ☒ ☐ Considering the location of the wetland in relation to the associated surface water watershed, is the wetland important for attenuating or storing flood or stormwater peaks (i.e. is the wetland located in the mid or lower reaches of the watershed)? **A portion of this wetland is located within the modeled 100-year floodplain.**

Water Quality Protection

1. ☒ Y ☐ N Does the wetland receive overland flow or direct discharge of stormwater as a primary source of water (circle that which applies)?
2. ☒ Y ☐ N Do the surrounding land uses have the potential to deliver significant nutrient and/or sediment loads to the wetland? **Road salt from CTH TT**
3. ☒ Y ☐ N Based on your answers to the flood/stormwater section above, does the wetland perform significant flood/stormwater attenuation (residence time to allow settling)?
4. ☒ Y ☐ N Does the wetland have significant vegetative density to decrease water energy and allow settling of suspended materials?
5. ☒ Y ☐ N Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface water?
6. ☒ Y ☐ N Are algal blooms, heavy macrophyte growth, or other signs of excess nutrient loading to the wetland apparent (or historically reported)?

Shoreline Protection

1. ☒ Y ☐ N Is the wetland in a lake fringe or riverine setting? If NO, STOP and enter "not applicable" for this function. If YES, then answer the applicable questions. **This plant community area is located just south of and connected via a culvert to the Pebble Creek wetland complex**
2. ☒ Y ☐ N Is the shoreline exposed to constant wave action caused by long wind fetch or boat traffic?
3. ☒ Y ☐ N Is the shoreline and shallow littoral zone vegetated with submerged or emergent vegetation in the swash zone that decrease wave energy or perennial wetland species that form dense root mats and/or species that have strong stems that are resistant to erosive forces? **This wetland plant community area is connected to a wetland complex that provides this function.**
4. ☒ Y ☐ N Is the stream bank prone to erosion due to unstable soils, land uses, or ice floes? **This wetland plant community area is connected to a wetland complex which may experience ice flows.**
5. ☒ Y ☐ N Is the stream bank vegetated with densely rooted shrubs that provide upper bank stability? **This wetland plant community area is connected to a wetland complex that provides this function.**

Groundwater Recharge and Discharge

1. ☒ Y ☐ N Related to discharge, are there observable (or reported) springs located in the wetland, physical indicators of springs such as marl soil, or vegetation indicators such as watercress or marsh marigold present that tend to indicate the presence of groundwater springs? **Springs reported and observed throughout Pebble Creek Watershed.**
2. ☒ Y ☐ N Related to discharge, may the wetland contribute to the maintenance of base flow in a stream?
3. ☒ Y ☐ N Related to recharge, is the wetland located on or near a groundwater divide (e.g. a topographic high)? **This plant community area is identified in SEWRPC Planning Report No. 52, A Regional Water Supply Plan for Southeastern Wisconsin, Volumes 1 and 2, as having a high groundwater recharge potential (See map).**

Aesthetics/Recreation/Education and Science

1. ☒ **Y** ☒ **N** Is the wetland visible from any of the following kinds of vantage points: roads public lands houses, and/or businesses? (Circle all that apply.) **Public lands include the bike trail.**
2. ☒ **Y** ☒ **N** Is the wetland in or near any population centers? **City of Waukesha**
3. ☒ **Y** ☒ **N** Is any part of the wetland in public or conservation ownership? **Wisconsin Dept. of Natural Resources**
4. ☒ **Y** ☒ **N** Does the public have direct access to the wetland from public roads or waterways? (Circle those that apply.) **Also have access from bike trail**
5. Is the wetland itself relatively free of obvious human influences, such as:
 - a. ☒ **Y** ☒ **N** Buildings?
 - b. ☒ **Y** ☒ **N** Roads?
 - c. ☒ **Y** ☒ **N** Other structures?
 - d. ☒ **Y** ☒ **N** Trash?
 - e. ☒ **Y** ☒ **N** Pollution?
 - f. ☒ **Y** ☒ **N** Filling?
 - g. ☒ **Y** ☒ **N** Dredging/drainage?
 - h. ☒ **Y** ☒ **N** Domination by non-native vegetation?
6. Is the surrounding viewshed relatively free of obvious human influences, such as:
 - a. ☒ **Y** ☒ **N** Buildings?
 - b. ☒ **Y** ☒ **N** Roads?
 - c. ☒ **Y** ☒ **N** Other structures? **Bike trail & railroad**
7. ☒ **Y** ☒ **N** Is the wetland organized into a variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water)?
8. ☒ **Y** ☒ **N** Does the wetland add to the variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water) within the landscape as a whole?
9. Does the wetland encourage exploration because any of the following factors are present:
 - a. ☒ **Y** ☒ **N** Long views within the wetland?
 - b. ☒ **Y** ☒ **N** Long views in the viewshed adjacent to the wetland?
 - c. ☒ **Y** ☒ **N** Convolved edges within and/or around the wetland border?
 - d. ☒ **Y** ☒ **N** The wetland provides a different (and perhaps more natural/complex) kind of environment from the surrounding land covers?
10. ☒ **Y** ☒ **N** Is the wetland currently being used for (or does it have the potential to be used for) the following recreational activities? (Check all that apply.)

ACTIVITY	CURRENT USE	POTENTIAL USE
Nature study/photography	X	
Hiking/biking/skiing		X
Hunting/fishing/trapping		
Boating/canoeing		
Food harvesting		
Others (list)		

11. ☒ **Y** ☒ **N** Is the wetland currently being used, and/or does it have the potential for use for educational or scientific study purposes (circle that which applies)?

Wisconsin Department of Natural Resources

RAPID ASSESSMENT METHODOLOGY FOR EVALUATING WETLAND FUNCTIONAL VALUES

GENERAL INFORMATION

Name of Wetland: Plant Community Area No. 15
Owner(s): Ronald J. Pietrowiak – Tax Key No. WAKT1324997 Mary E. Kawatski – Tax Key No. WAKC1324999
Location: Waukesha County; SE ¼ Section 7, Township 6N, Range 19E
Project Name: Proposed Waukesha West Bypass
Evaluator(s): Donald M. Reed, PhD., Chief Biologist; Lawrence A. Leitner, PhD., Principal Biologist; Christopher J. Jors, Biologist, Southeastern Wisconsin Regional Planning Commission
Date(s) of Site Visit(s): August 30, 2011

Description of seasonality limitations of this inspection due to time of year of the evaluation and/or current hydrologic and climatologic conditions (e.g. after heavy rains, snow or ice cover, during drought year, during spring flood, during bird migration): **Precipitation records in 2011 indicate normal to below normal precipitation (0 to -1 inches) for June, below normal (-1 to -2 inches) for July, and below normal (-2 to -3 inches) for August.**

WETLAND DESCRIPTION

Wisconsin Wetlands Inventory classification: E2K
Wetland Type: shallow open water deep marsh <u>shallow marsh</u> seasonally flooded basin bog floodplain forest alder thicket sedge meadow coniferous swamp fen <u>wet meadow</u> <u>shrub-carr</u> low prairie <u>hardwood swamp</u>
Estimated size of wetland in acres: Study area wetland = 0.4 acres

SUMMARY OF FUNCTIONAL VALUES

Based on the results of the attached functional assessment, rate the significance of each of the functional values for the subject wetland and check the appropriate box. Complete the table as a summary.

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	N/A
Floral Diversity		X			
Wildlife Habitat			X		
Fishery Habitat			X		
Flood/Stormwater Attenuation		X			
Water Quality Protection			X		
Shoreline Protection			X		
Groundwater			X		
Aesthetics/Recreation/Education		X			

List any Special Features/"Red Flags": **Longear sunfish (*Lepomis megalotis*), a State-designated Threatened species, has been recorded by the Commission staff in Pebble Creek downstream of this location. Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, has been identified by the Commission staff south of this location. Blanding's turtle (*Emydoidea***

blandingii), a State-designated Threatened species, recorded by Retzer Nature Center staff west of this location. In addition, Natural Heritage Inventory (NHI) identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. See page 5 for details.

SITE DESCRIPTION

I. HYDROLOGIC SETTING

A. Describe the geomorphology of the wetland:

- ☐ Depressional (includes slopes, potholes, small lakes, kettles, etc.)
- ☒ Riverine
- ☐ Lake Fringe
- ☐ Extensive Peatland

B. **Y** **N** Has the wetland hydrology been altered by ditching tiles, dams culverts well pumping, diversion of surface flow or changes to runoff within the watershed (circle those that apply)?
Past CTH TT construction to west and bike trail/railroad construction to south has impeded natural flows into the subject wetland and concentrated them under a the CTH TT bridge and through a culvert under the bike trail & railroad.

C. **Y** **N** Does the wetland have an inlet, outlet, or both (circle those that apply)?
Pebble Creek inlet from under bridge at CTH TT and outlet downstream

D. **Y** **N** Is there any field evidence of wetland hydrology such as buttressed tree trunks, adventitious roots, drift lines, water marks, water stained leaves, soil mottling/gleying, organic soils layer, or oxidized rhizospheres (circle those that apply)? **Hydrology indicators at Sample Site No. 38 include a high water table/saturation at surface, water stained leaves, within a mapped floodway, geomorphic position, and a positive FAC-Neutral test.**

E. **Y** **N** Does the wetland have standing water, and if so what is the average depth in inches?
Approximately how much of the wetland is inundated?
No standing water observed at sample site. However, surface water flow within Pebble Creek channel observed. Parts of wetland likely inundated in early growing season.

F. How is the hydroperiod (seasonal water level pattern) of the wetland classified?

- ☐ Permanently Flooded
- ☒ Seasonally Flooded (water absent at end of growing season)
- ☐ Saturated (surface water seldom present)
- ☐ Artificially Flooded
- ☐ Artificially Drained

G. **Y** **N** Is the wetland a navigable body of water or is a portion of the wetland below the ordinary high-water mark of a navigable water body? List any surface waters associated with the wetland or in proximity to the wetland (note approximate distance from the wetland and navigability determination). Note if there is a surface water connection to other wetlands.
Pebble Creek, which flows through the subject plant community area, is navigable. There is a surface water connection to other wetlands.

II. VEGETATION

A. Identify the vegetation communities present and the dominant species.

	floating leaved community dominated by:
	submerged aquatic community dominated by:
X	emergent community dominated by: Typha angustifolia & Phalaris arundinacea
X	shrub community dominated by: While no dominants were listed, Cornus spp. and Salix spp. were present
X	deciduous broad-leaved tree community dominated by: Acer negundo & Rhamnus cathartica
	coniferous tree community dominated by:
	open sphagnum mat or bog
	sedge meadow/wet prairie community dominated by:
	other (explain)

B. Other plant species identified during site visit:

See attached species list

III. SOILS

A. NRCS Soil Map Classification: **Wet alluvial land (Ww); Sebewa silt loam (Sm) – Poorly drained**

B. Field description: **Recorded August 30, 2011**

☒ Organic (histosol)? If so, is it a muck or a peat? **Muck**

☐ Mineral soil?

- Mottling, gleying, sulfidic materials, iron or manganese concretions, organic streaking (circle those that apply)
- Soil Description:
- Depth of mottling/gleying:
- Depth of A Horizon:
- Munsell Color of matrix and mottles
 - Matrix below the A horizon:
 - Mottles:

Depth (inches)	Matrix Color	Redox Concentrations Color	Redox Concentrations Abundance/Contrast	Texture
0-20	N 1/0			Muck

V. SURROUNDING LAND USES

A. What is the estimated area of the wetland watershed in acres? **3.9**

B. What are the surrounding land uses?

LAND-USE	ESTIMATED % OF WETLAND WATERSHED
Developed (Industrial/Commercial/Residential)	--
Agricultural/cropland	--
Agricultural/grazing	--
Forested (Upland)	14
Grassed recreation areas/parks	7
Old field	--
Highways, roads, bike trails	22
Other (specify) : Wetland	57

VI. SITE SKETCH

See attached aerial map exhibit

FUNCTIONAL ASSESSMENT

The following assessment requires the evaluator to examine site conditions that provide evidence that a given functional value is present and to assess the significance of the wetland to perform those functions. Positive answers to questions indicate the presence of factors important for the function. The questions are not definitive and are only provided to guide the evaluation. After completing each section, the evaluator should consider the factors observed and use best professional judgement to rate the significance. The ratings should be recorded on page 1 of the assessment.

SPECIAL FEATURES/"RED FLAGS"

1. ☒ **Y** ☐ **N** Is the wetland in or adjacent to an area of special natural resource interest (NR 103.04, Wis. Adm. Code)? If so, check those that apply:
 - ☒ Cold water community as defined in s. NR 102.04(3)(b), Wis. Adm. Code, including trout streams, their tributaries, and trout lakes
 - ☐ Lakes Michigan and Superior and the Mississippi River
 - ☐ State or federal designated wild and scenic river
 - ☐ Designated state riverway
 - ☐ Designated state scenic urban waterway
 - ☒ Environmentally sensitive area or environmental corridor identified in an area-wide water quality management plan, special area management plan, special wetland inventory study, or an advanced delineation and identification study – **Primary environmental corridor; ADID wetland**
 - ☐ Calcareous fen
 - ☐ State park, forest, trail or recreation area
 - ☐ State and federal fish and wildlife refuges and fish and wildlife management areas
 - ☐ State or federal designated wilderness area
 - ☐ Designated or dedicated state natural area
 - ☐ Wild rice water listed in ch. NR 19.09, Wis. Adm. Code
 - ☐ Surface water identified as an outstanding or exceptional resource water in ch. NR 102, Wis. Adm. Code
2. ☒ **Y** ☐ **N** According to the Natural Heritage Inventory (Bureau of Endangered Resources) or direct observations, are there any rare, endangered, or threatened plant or animal species in, near, or using the wetland or adjacent lands? If so, list the species of concern: **Longear sunfish (*Lepomis megalotis*), a State-designated Threatened species, has been recorded by the Commission staff in Pebble Creek downstream of this location. Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, has been identified by the Commission staff south of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff west of this location. In addition, Natural Heritage Inventory (NHI) identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. This broad NHI finding is based upon an 1845 record for this species typically found in dry prairies. Accordingly, it is very unlikely that this plant community area would support this species.**
3. ☐ **Y** ☒ **N** Is the project located in an area that requires a State Coastal Zone Management Plan consistency determination?

Floral Diversity

1. ☒ **Y** ☐ **N** Does the wetland support a variety of native plant species (i.e. not a monotypic stand of cattail or giant reed grass and/or not dominated by exotic species such as reed canary grass, brome grass, buckthorn, purple loosestrife, etc.)?
2. ☐ **Y** ☒ **N** Is the wetland plant community regionally scarce or rare?

Wildlife and Fishery Habitat

1. List any species observed, evidenced (e.g. tracks, scat, nest/burrow, calls), or expected to utilize the wetland: **Northern pike determined by the Commission staff to be a resident fish species in Pebble Creek. Total of 20 species of fish recorded at this location including primary coldwater, secondary coolwater, and warmwater fish assemblages. Macroinvertebrate abundance and diversity are indicative of very good water quality in this reach. Raccon, White-tailed deer, passerine birds, marsh birds, waterfowl, and muskrat utilize this wetland.**

2. ☒ **Y** ☐ **N** Does the wetland contain a number of diverse vegetative cover types and a high degree of interspersed of those vegetation types?
3. ☒ **Y** ☐ **N** Is the estimated ratio of open water to cover between 30 and 70 percent? What is the estimated ratio? **5% - Open water in creek bed**
4. ☒ **Y** ☐ **N** Does the surrounding upland habitat likely support a variety of animal species?
No mapped wildlife habitat
5. ☒ **Y** ☐ **N** Is the wetland part of or associated with a wildlife corridor or designated environmental corridor?
Class I & II Wildlife Habitat & Primary environmental corridor
6. ☒ **Y** ☐ **N** Is the surrounding habitat and/or the wetland itself a large tract of undeveloped land important for wildlife that requires large home ranges (e.g. bear, woodland passerines)?
7. ☒ **Y** ☐ **N** Is the surrounding habitat and/or the wetland itself a relatively large tract of undeveloped land within an urbanized environment that is important for wildlife?
8. ☒ **Y** ☐ **N** Are there other wetland areas near the subject wetland that may be important to wildlife?
Important wetlands for wildlife along the Pebble Creek corridor
9. ☒ **Y** ☐ **N** Is the wetland contiguous with a permanent waterbody or periodically inundated for sufficient periods of time to provide spawning/nursery habitat for fish?
Pebble Creek supports a resident population of Northern pike and the majority of this area is within the modeled 2-year recurrence interval floodplain which likely supports spawning habitat.
10. ☒ **Y** ☐ **N** Can the wetland provide significant food base for fish and wildlife (e.g. insects, crustaceans, voles, forage fish, amphibians, reptiles, shrews, wild rice, wild celery, duckweed, pondweeds, watermeal, bulrushes, bur reeds, arrowhead, smartweeds, millets...)?
11. ☒ **Y** ☐ **N** Is the wetland located in a priority watershed/township as identified in the Upper Mississippi and Great Lakes Joint Venture of the North American Waterfowl Management Plan?
12. ☒ **Y** ☐ **N** Is the wetland providing habitat that is scarce to the region?

Flood and Stormwater Storage/Attenuation

1. ☒ **Y** ☐ **N** Are there steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within the watershed (circle those that apply)? **Steep shoulders and impervious surfaces along CTH TT and the bike trail**
2. ☒ **Y** ☐ **N** Does the wetland significantly reduce run-off velocity due to its size, configuration, braided flow patterns, or vegetation type and density? **Runoff velocity is significantly reduced when stormwater runoff enters the subject wetland**
3. ☒ **Y** ☐ **N** Does the wetland show evidence of flashy water level responses to storm events (debris marks, erosion lines, stormwater inputs, channelized inflow)?
4. ☒ **Y** ☐ **N** Is there a natural feature or human-made structure impeding drainage from the wetland that causes backwater conditions?
5. ☒ **Y** ☐ **N** Considering the size of the wetland area in relation to the size of its watershed, at any time during the year is water likely to reach the wetland's storage capacity (i.e. the level of easily observable wetland vegetation)? [For some cases where greater documentation is required, one should determine if the wetland has capacity to hold 25% of the run-off from a 2 year-24 hour storm event.]
6. ☒ **Y** ☐ **N** Considering the location of the wetland in relation to the associated surface water watershed, is the wetland important for attenuating or storing flood or stormwater peaks (i.e. is the wetland located in the mid or lower reaches of the watershed)? **Portions of this area are within the modeled 100-year floodplain and floodway.**

Water Quality Protection

1. ☒ **Y** ☐ **N** Does the wetland receive overland flow or direct discharge of stormwater as a primary source of water (circle that which applies)? **Primary source of water contribution to wetland is from Pebble Creek**
2. ☒ **Y** ☐ **N** Do the surrounding land uses have the potential to deliver significant nutrient and/or sediment loads to the wetland? **Road salt from CTH TT and potential nutrient loads if turf grass area to north is fertilized.**
3. ☒ **Y** ☐ **N** Based on your answers to the flood/stormwater section above, does the wetland perform significant flood/stormwater attenuation (residence time to allow settling)?
4. ☒ **Y** ☐ **N** Does the wetland have significant vegetative density to decrease water energy and allow settling of suspended materials?
5. ☒ **Y** ☐ **N** Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface water?
6. ☐ **Y** ☒ **N** Are algal blooms, heavy macrophyte growth, or other signs of excess nutrient loading to the wetland apparent (or historically reported)?

Shoreline Protection

1. ☒ **Y** ☐ **N** Is the wetland in a lake fringe or riverine setting? If NO, STOP and enter "not applicable" for this function. If YES, then answer the applicable questions.
2. ☐ **Y** ☒ **N** Is the shoreline exposed to constant wave action caused by long wind fetch or boat traffic?
3. ☒ **Y** ☐ **N** Is the shoreline and shallow littoral zone vegetated with submerged or emergent vegetation in the swash zone that decrease wave energy or perennial wetland species that form dense root mats and/or species that have strong stems that are resistant to erosive forces?
4. ☒ **Y** ☐ **N** Is the stream bank prone to erosion due to unstable soils, land uses, or ice floes?
5. ☒ **Y** ☐ **N** Is the stream bank vegetated with densely rooted shrubs that provide upper bank stability?

Groundwater Recharge and Discharge

1. ☒ **Y** ☐ **N** Related to discharge, are there observable (or reported) springs located in the wetland, physical indicators of springs such as marl soil, or vegetation indicators such as watercress or marsh marigold present that tend to indicate the presence of groundwater springs? **Springs reported and observed throughout Pebble Creek watershed**
2. ☒ **Y** ☐ **N** Related to discharge, may the wetland contribute to the maintenance of base flow in a stream?
3. ☒ **Y** ☐ **N** Related to recharge, is the wetland located on or near a groundwater divide (e.g. a topographic high)? **A large portion of this area is identified in SEWRPC Planning Report No. 52, A Regional Water Supply Plan for Southeastern Wisconsin, Volumes 1 and 2, as having a high groundwater recharge potential (See map).**

Aesthetics/Recreation/Education and Science

1. ☒ **Y** ☐ **N** Is the wetland visible from any of the following kinds of vantage points: roads, public lands, houses, and/or businesses? (Circle all that apply.)

2. ☒ Y ☒ N Is the wetland in or near any population centers? **City of Waukesha**
3. ☒ Y ☒ N Is any part of the wetland in public or conservation ownership?
4. ☒ Y ☒ N Does the public have direct access to the wetland from public roads or waterways? (Circle those that apply.)
5. Is the wetland itself relatively free of obvious human influences, such as:
- a. ☒ Y ☒ N Buildings?
 - b. ☒ Y ☒ N Roads?
 - c. ☒ Y ☒ N Other structures?
 - d. ☒ Y ☒ N Trash?
 - e. ☒ Y ☒ N Pollution?
 - f. ☒ Y ☒ N Filling?
 - g. ☒ Y ☒ N Dredging/drainage?
 - h. ☒ Y ☒ N Domination by non-native vegetation?
6. Is the surrounding viewshed relatively free of obvious human influences, such as:
- a. ☒ Y ☒ N Buildings?
 - b. ☒ Y ☒ N Roads?
 - c. ☒ Y ☒ N Other structures?
7. ☒ Y ☒ N Is the wetland organized into a variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water)?
8. ☒ Y ☒ N Does the wetland add to the variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water) within the landscape as a whole?
9. Does the wetland encourage exploration because any of the following factors are present:
- a. ☒ Y ☒ N Long views within the wetland?
 - b. ☒ Y ☒ N Long views in the viewshed adjacent to the wetland?
 - c. ☒ Y ☒ N Convoluted edges within and/or around the wetland border?
 - d. ☒ Y ☒ N The wetland provides a different (and perhaps more natural/complex) kind of environment from the surrounding land covers?
10. ☒ Y ☒ N Is the wetland currently being used for (or does it have the potential to be used for) the following recreational activities? (Check all that apply.)

ACTIVITY	CURRENT USE	POTENTIAL USE
Nature study/photography	X	
Hiking/biking/skiing		X
Hunting/fishing/trapping		X
Boating/canoeing		X
Food harvesting		
Others (list)		

11. ☒ Y ☒ N Is the wetland currently being used, and/or does it have the potential for use for educational or scientific study purposes (circle that which applies)?

Wisconsin Department of Natural Resources

RAPID ASSESSMENT METHODOLOGY FOR EVALUATING WETLAND FUNCTIONAL VALUES

GENERAL INFORMATION

Name of Wetland: Plant Community Area No. 16
Owner(s): Richard Hase – Tax Key No. WAKT1324995
Location: Waukesha County; SE ¼ Section 7, Township 6N, Range 19E
Project Name: Proposed Waukesha West Bypass
Evaluator(s): Donald M. Reed, PhD., Chief Biologist; Lawrence A. Leitner, PhD., Principal Biologist; Christopher J. Jors, Biologist, Southeastern Wisconsin Regional Planning Commission
Date(s) of Site Visit(s): August 30, 2011

Description of seasonality limitations of this inspection due to time of year of the evaluation and/or current hydrologic and climatologic conditions (e.g. after heavy rains, snow or ice cover, during drought year, during spring flood, during bird migration): **Precipitation records in 2011 indicate normal to below normal precipitation (0 to -1 inches) for June, below normal (-1 to -2 inches) for July, and below normal (-2 to -3 inches) for August.**

WETLAND DESCRIPTION

Wisconsin Wetlands Inventory classification: T3/E2K
Wetland Type: shallow open water deep marsh shallow marsh seasonally flooded basin bog floodplain forest alder thicket <u>sedge meadow</u> coniferous swamp fen <u>wet meadow</u> shrub-carr low prairie <u>hardwood swamp</u>
Estimated size of wetland in acres: Study area wetland = 1.8 acres

SUMMARY OF FUNCTIONAL VALUES

Based on the results of the attached functional assessment, rate the significance of each of the functional values for the subject wetland and check the appropriate box. Complete the table as a summary.

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	N/A
Floral Diversity		X			
Wildlife Habitat			X		
Fishery Habitat			X		
Flood/Stormwater Attenuation			X		
Water Quality Protection			X		
Shoreline Protection			X		
Groundwater			X		
Aesthetics/Recreation/Education		X			

List any Special Features/"Red Flags": **Longear sunfish (*Lepomis megalotis*), a State-designated Threatened species, has been recorded by the Commission staff in Pebble Creek downstream of this location and Brown trout were observed in this reach. Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, has been identified by the Commission staff south of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species,**

recorded by Retzer Nature Center staff west of this location. In addition, Natural Heritage Inventory (NHI) identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. See page 5 for details.

SITE DESCRIPTION

I. HYDROLOGIC SETTING

A. Describe the geomorphology of the wetland:

- ☐ Depressional (includes slopes, potholes, small lakes, kettles, etc.)
- ☒ Riverine
- ☐ Lake Fringe
- ☐ Extensive Peatland

B. **Y** **N** Has the wetland hydrology been altered by ditching tiles, dams culverts well pumping, diversion of surface flow or changes to runoff within the watershed (circle those that apply)?
Past CTH TT construction to east and bike trail/railroad construction to south has impeded natural flows into the subject wetland and concentrated them under the CTH TT bridge.

C. **Y** **N** Does the wetland have an inlet, outlet, or both (circle those that apply)?
Pebble Creek inlet from west and outlet downstream under CTH TT bridge.

D. **Y** **N** Is there any field evidence of wetland hydrology such as buttressed tree trunks, adventitious roots, drift lines, water marks, water stained leaves, soil mottling/gleying, organic soils layer, or oxidized rhizospheres (circle those that apply)? **Hydrology indicators at Sample Site No. 40 include a high water table at 9 inches below the surface, saturation at the surface, water stained leaves, geomorphic position, a positive FAC-Neutral test, and muck soils (histosol).**

E. **Y** **N** Does the wetland have standing water, and if so what is the average depth in inches? Approximately how much of the wetland is inundated?
Standing water observed in the Pebble Creek channel. Significant parts of wetland likely inundated in early growing season.

F. How is the hydroperiod (seasonal water level pattern) of the wetland classified?

- ☐ Permanently Flooded
- ☒ Seasonally Flooded (water absent at end of growing season)
- ☐ Saturated (surface water seldom present)
- ☐ Artificially Flooded
- ☐ Artificially Drained

G. **Y** **N** Is the wetland a navigable body of water or is a portion of the wetland below the ordinary high-water mark of a navigable water body? List any surface waters associated with the wetland or in proximity to the wetland (note approximate distance from the wetland and navigability determination). Note if there is a surface water connection to other wetlands.
Pebble Creek, which flows through the subject plant community area, is navigable. There is a surface water connection to other wetlands.

II. VEGETATION

A. Identify the vegetation communities present and the dominant species.

	floating leaved community dominated by:
	submerged aquatic community dominated by:
X	emergent community dominated by: Phalaris arundinacea
	shrub community dominated by:
X	deciduous broad-leaved tree community dominated by: Acer negundo & Populus tremuloides
	coniferous tree community dominated by:
	open sphagnum mat or bog
X	sedge meadow/wet prairie community dominated by: While no dominants were listed, Carex stricta & Carex trichocarpa are present
	other (explain)

B. Other plant species identified during site visit:

See attached species list

III. SOILS

A. NRCS Soil Map Classification: **Wet alluvial land (Ww)**

B. Field description: **Recorded August 30, 2011**

☒ Organic (histosol)? If so, is it a muck or a peat? **Muck (histosol)**

☐ Mineral soil?

- Mottling, gleying, sulfidic materials, iron or manganese concretions, organic streaking (circle those that apply)
- Soil Description:
- Depth of mottling/gleying:
- Depth of A Horizon:
- Munsell Color of matrix and mottles
 - Matrix below the A horizon:
 - Mottles:

Depth (inches)	Matrix Color	Redox Concentrations Color	Redox Concentrations Abundance/Contrast	Texture
0-20	N 1/0			Muck

V. SURROUNDING LAND USES

A. What is the estimated area of the wetland watershed in acres? **14.2**

B. What are the surrounding land uses?

LAND-USE	ESTIMATED % OF WETLAND WATERSHED
Developed (Industrial/Commercial/Residential)	3
Agricultural/cropland	--
Agricultural/grazing	--
Forested (Upland)	9
Grassed recreation areas/parks	--
Old field	21
Highways, roads, bike trails	7
Other (specify) : Wetland	60

VI. SITE SKETCH

See attached aerial map exhibit

FUNCTIONAL ASSESSMENT

The following assessment requires the evaluator to examine site conditions that provide evidence that a given functional value is present and to assess the significance of the wetland to perform those functions. Positive answers to questions indicate the presence of factors important for the function. The questions are not definitive and are only provided to guide the evaluation. After completing each section, the evaluator should consider the factors observed and use best professional judgement to rate the significance. The ratings should be recorded on page 1 of the assessment.

SPECIAL FEATURES/"RED FLAGS"

1. ☒ **Y** ☐ **N** Is the wetland in or adjacent to an area of special natural resource interest (NR 103.04, Wis. Adm. Code)? If so, check those that apply:
 - ☒ Cold water community as defined in s. NR 102.04(3)(b), Wis. Adm. Code, including trout streams, their tributaries, and trout lakes
 - ☐ Lakes Michigan and Superior and the Mississippi River
 - ☐ State or federal designated wild and scenic river
 - ☐ Designated state riverway
 - ☐ Designated state scenic urban waterway
 - ☒ Environmentally sensitive area or environmental corridor identified in an area-wide water quality management plan, special area management plan, special wetland inventory study, or an advanced delineation and identification study – **Primary environmental corridor; ADID wetland**
 - ☐ Calcareous fen
 - ☐ State park, forest, trail or recreation area
 - ☐ State and federal fish and wildlife refuges and fish and wildlife management areas
 - ☐ State or federal designated wilderness area
 - ☐ Designated or dedicated state natural area
 - ☐ Wild rice water listed in ch. NR 19.09, Wis. Adm. Code
 - ☐ Surface water identified as an outstanding or exceptional resource water in ch. NR 102, Wis. Adm. Code
2. ☒ **Y** ☐ **N** According to the Natural Heritage Inventory (Bureau of Endangered Resources) or direct observations, are there any rare, endangered, or threatened plant or animal species in, near, or using the wetland or adjacent lands? If so, list the species of concern: **Longear sunfish (*Lepomis megalotis*), a State-designated Threatened species, has been recorded by the Commission staff in Pebble Creek downstream of this location. Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, has been identified by the Commission staff south of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff west of this location. In addition, Natural Heritage Inventory (NHI) identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. This broad NHI finding is based upon an 1845 record for this species typically found in dry prairies. Accordingly, it is very unlikely that this plant community area would support this species.**
3. ☐ **Y** ☒ **N** Is the project located in an area that requires a State Coastal Zone Management Plan consistency determination?

Floral Diversity

1. ☒ **Y** ☐ **N** Does the wetland support a variety of native plant species (i.e. not a monotypic stand of cattail or giant reed grass and/or not dominated by exotic species such as reed canary grass, brome grass, buckthorn, purple loosestrife, etc.)?
2. ☐ **Y** ☒ **N** Is the wetland plant community regionally scarce or rare?

Wildlife and Fishery Habitat

1. List any species observed, evidenced (e.g. tracks, scat, nest/burrow, calls), or expected to utilize the wetland: **Commission staff recorded a total of 21 species of fish at this location including primary coldwater (Brown trout, Mottled sculpin), secondary coolwater species, and warmwater fish assemblages. Macroinvertebrate abundance and diversity are indicative of very good water quality in this reach of Pebble Creek. Raccon, Muskrats, White-tailed deer, passerine birds, waterfowl, and marsh birds utilize this wetland.**

2. ☒ **Y** ☐ **N** Does the wetland contain a number of diverse vegetative cover types and a high degree of interspersed of those vegetation types?
3. ☐ **Y** ☒ **N** Is the estimated ratio of open water to cover between 30 and 70 percent? What is the estimated ratio? **5% - Open water in creek bed**
4. ☒ **Y** ☐ **N** Does the surrounding upland habitat likely support a variety of animal species?
Class I & II wildlife habitat
5. ☒ **Y** ☐ **N** Is the wetland part of or associated with a wildlife corridor or designated environmental corridor?
Class I & II Wildlife Habitat & Primary environmental corridor
6. ☐ **Y** ☒ **N** Is the surrounding habitat and/or the wetland itself a large tract of undeveloped land important for wildlife that requires large home ranges (e.g. bear, woodland passerines)?
7. ☒ **Y** ☐ **N** Is the surrounding habitat and/or the wetland itself a relatively large tract of undeveloped land within an urbanized environment that is important for wildlife?
8. ☒ **Y** ☐ **N** Are there other wetland areas near the subject wetland that may be important to wildlife?
Important wetlands for wildlife along the Pebble Creek corridor
9. ☒ **Y** ☐ **N** Is the wetland contiguous with a permanent waterbody or periodically inundated for sufficient periods of time to provide spawning/nursery habitat for fish?
Pebble Creek supports a resident population of Northern pike and most of this area is within the modeled 2-year recurrence interval floodplain boundary which likely supports spawning habitat.
10. ☒ **Y** ☐ **N** Can the wetland provide significant food base for fish and wildlife (e.g. insects, crustaceans, voles, forage fish, amphibians, reptiles, shrews, wild rice, wild celery, duckweed, pondweeds, watermeal, bulrushes, bur reeds, arrowhead, smartweeds, millets...)?
11. ☐ **Y** ☒ **N** Is the wetland located in a priority watershed/township as identified in the Upper Mississippi and Great Lakes Joint Venture of the North American Waterfowl Management Plan?
12. ☐ **Y** ☒ **N** Is the wetland providing habitat that is scarce to the region?

Flood and Stormwater Storage/Attenuation

1. ☒ **Y** ☐ **N** Are there steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within the watershed (circle those that apply)? **Steep shoulders and impervious surfaces along CTH TT and the bike trail**
2. ☒ **Y** ☐ **N** Does the wetland significantly reduce run-off velocity due to its size, configuration, braided flow patterns, or vegetation type and density? **Runoff velocity is significantly reduced when stormwater runoff enters the subject wetland**
3. ☐ **Y** ☒ **N** Does the wetland show evidence of flashy water level responses to storm events (debris marks, erosion lines, stormwater inputs, channelized inflow)?
4. ☒ **Y** ☐ **N** Is there a natural feature or human-made structure impeding drainage from the wetland that causes backwater conditions? **Construction of CTH TT roadbed through wetland has impeded flows & re-directed them to bridge under CTH TT.**
5. ☐ **Y** ☒ **N** Considering the size of the wetland area in relation to the size of its watershed, at any time during the year is water likely to reach the wetland's storage capacity (i.e. the level of easily observable wetland vegetation)? [For some cases where greater documentation is required, one should determine if the wetland has capacity to hold 25% of the run-off from a 2 year-24 hour storm event.]
6. ☒ **Y** ☐ **N** Considering the location of the wetland in relation to the associated surface water watershed, is the wetland important for attenuating or storing flood or stormwater peaks (i.e. is the wetland located in the mid or lower reaches of the watershed)? **Large portions of this area are within the modeled 100-year recurrence interval floodplain and floodway boundary.**

Water Quality Protection

1. ☒ Y ☒ N Does the wetland receive overland flow or direct discharge of stormwater as a primary source of water (circle that which applies)? **Primary source of water contribution to wetland is from Pebble Creek**
2. ☒ Y ☒ N Do the surrounding land uses have the potential to deliver significant nutrient and/or sediment loads to the wetland? **Road salt from CTH TT to east and parking lot to north; and potential nutrient loads if turf grass area to north is fertilized.**
3. ☒ Y ☒ N Based on your answers to the flood/stormwater section above, does the wetland perform significant flood/stormwater attenuation (residence time to allow settling)?
4. ☒ Y ☒ N Does the wetland have significant vegetative density to decrease water energy and allow settling of suspended materials?
5. ☒ Y ☒ N Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface water?
6. ☒ Y ☒ N Are algal blooms, heavy macrophyte growth, or other signs of excess nutrient loading to the wetland apparent (or historically reported)?

Shoreline Protection

1. ☒ Y ☒ N Is the wetland in a lake fringe or riverine setting? If NO, STOP and enter "not applicable" for this function. If YES, then answer the applicable questions.
2. ☒ Y ☒ N Is the shoreline exposed to constant wave action caused by long wind fetch or boat traffic?
3. ☒ Y ☒ N Is the shoreline and shallow littoral zone vegetated with submerged or emergent vegetation in the swash zone that decrease wave energy or perennial wetland species that form dense root mats and/or species that have strong stems that are resistant to erosive forces?
4. ☒ Y ☒ N Is the stream bank prone to erosion due to unstable soils, land uses, or ice floes?
5. ☒ Y ☒ N Is the stream bank vegetated with densely rooted shrubs that provide upper bank stability?

Groundwater Recharge and Discharge

1. ☒ Y ☒ N Related to discharge, are there observable (or reported) springs located in the wetland, physical indicators of springs such as marl soil, or vegetation indicators such as watercress or marsh marigold present that tend to indicate the presence of groundwater springs? **Springs reported and observed throughout Pebble Creek watershed**
2. ☒ Y ☒ N Related to discharge, may the wetland contribute to the maintenance of base flow in a stream?
3. ☒ Y ☒ N Related to recharge, is the wetland located on or near a groundwater divide (e.g. a topographic high)? **A small portion of this area is identified in SEWRPC Planning Report No. 52, A Regional Water Supply Plan for Southeastern Wisconsin, Volumes 1 and 2, as having a high groundwater recharge potential (See map). Also, this area is adjacent to lands with high groundwater recharge potential.**

Aesthetics/Recreation/Education and Science

1. ☒ Y ☒ N Is the wetland visible from any of the following kinds of vantage points: roads, public lands, houses, and/or businesses? (Circle all that apply.)

2. ☒ Y ☐ N Is the wetland in or near any population centers? **City of Waukesha**
3. ☒ Y ☐ N Is any part of the wetland in public or conservation ownership?
4. ☒ Y ☐ N Does the public have direct access to the wetland from public roads or waterways? (Circle those that apply.)
5. Is the wetland itself relatively free of obvious human influences, such as:
- a. ☒ Y ☐ N Buildings?
 - b. ☒ Y ☐ N Roads?
 - c. ☒ Y ☐ N Other structures?
 - d. ☒ Y ☐ N Trash?
 - e. ☒ Y ☐ N Pollution?
 - f. ☒ Y ☐ N Filling?
 - g. ☒ Y ☐ N Dredging/drainage?
 - h. ☒ Y ☐ N Domination by non-native vegetation?
6. Is the surrounding viewshed relatively free of obvious human influences, such as:
- a. ☒ Y ☐ N Buildings?
 - b. ☒ Y ☐ N Roads?
 - c. ☒ Y ☐ N Other structures?
7. ☒ Y ☐ N Is the wetland organized into a variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water)?
8. ☒ Y ☐ N Does the wetland add to the variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water) within the landscape as a whole?
9. Does the wetland encourage exploration because any of the following factors are present:
- a. ☒ Y ☐ N Long views within the wetland?
 - b. ☒ Y ☐ N Long views in the viewshed adjacent to the wetland?
 - c. ☒ Y ☐ N Convolved edges within and/or around the wetland border?
 - d. ☒ Y ☐ N The wetland provides a different (and perhaps more natural/complex) kind of environment from the surrounding land covers?
10. ☒ Y ☐ N Is the wetland currently being used for (or does it have the potential to be used for) the following recreational activities? (Check all that apply.)

ACTIVITY	CURRENT USE	POTENTIAL USE
Nature study/photography	X	
Hiking/biking/skiing		X
Hunting/fishing/trapping		X
Boating/canoeing		X
Food harvesting		
Others (list)		

11. ☒ Y ☐ N Is the wetland currently being used, and/or does it have the potential for use for educational or scientific study purposes (circle that which applies)?

Wisconsin Department of Natural Resources

RAPID ASSESSMENT METHODOLOGY FOR EVALUATING WETLAND FUNCTIONAL VALUES

GENERAL INFORMATION

Name of Wetland: Plant Community Area No. 17
Owner(s): Richard Hase – Tax Key No. WAKT1324995
Location: Waukesha County; SE ¼ Section 7, Township 6N, Range 19E
Project Name: Proposed Waukesha West Bypass
Evaluator(s): Donald M. Reed, PhD., Chief Biologist; Lawrence A. Leitner, PhD., Principal Biologist; Christopher J. Jors, Biologist, Southeastern Wisconsin Regional Planning Commission
Date(s) of Site Visit(s): September 6, 2011

Description of seasonality limitations of this inspection due to time of year of the evaluation and/or current hydrologic and climatologic conditions (e.g. after heavy rains, snow or ice cover, during drought year, during spring flood, during bird migration): **Precipitation records in 2011 indicate normal to below normal precipitation (0 to -1 inches) for June, below normal (-1 to -2 inches) for July, and below normal (-2 to -3 inches) for August.**

WETLAND DESCRIPTION

Wisconsin Wetlands Inventory classification: WOHx
Wetland Type: <u>shallow open water</u> deep marsh <u>shallow marsh</u> seasonally flooded basin bog floodplain forest alder thicket sedge meadow coniferous swamp fen <u>wet meadow</u> shrub-carr low prairie hardwood swamp
Estimated size of wetland in acres: Study area wetland = 0.7 acres

SUMMARY OF FUNCTIONAL VALUES

Based on the results of the attached functional assessment, rate the significance of each of the functional values for the subject wetland and check the appropriate box. Complete the table as a summary.

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	N/A
Floral Diversity		X			
Wildlife Habitat		X			
Fishery Habitat		X			
Flood/Stormwater Attenuation		X			
Water Quality Protection			X		
Shoreline Protection		X			
Groundwater		X			
Aesthetics/Recreation/Education	X				

List any Special Features/"Red Flags": **Longear sunfish (*Lepomis megalotis*), a State-designated Threatened species, has been recorded by the Commission staff in Pebble Creek downstream of this location. Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, has been identified by the Commission staff south of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff west of**

this location. In addition, Natural Heritage Inventory (NHI) identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. See page 5 for details.

SITE DESCRIPTION

I. HYDROLOGIC SETTING

A. Describe the geomorphology of the wetland:

- ☒ Depressional (includes slopes, potholes, small lakes, kettles, etc.)
- ☐ Riverine
- ☐ Lake Fringe
- ☐ Extensive Peatland

B. ☒ **Y** ☐ **N** Has the wetland hydrology been altered by ditching tiles, dams, culverts, well pumping, diversion of surface flow, or changes to runoff within the watershed (circle those that apply)?
North-South ditch runs through wetland. Also, a pond was excavated in this wetland, including an earthen berm to contain water.

C. ☒ **Y** ☐ **N** Does the wetland have an inlet, outlet, or both (circle those that apply)?
Ditch runs through wetlands carrying flows southward toward Pebble Creek.

D. ☒ **Y** ☐ **N** Is there any field evidence of wetland hydrology such as buttressed tree trunks, adventitious roots, drift lines, water marks, water stained leaves, soil mottling/gleying, organic soils layer, or oxidized rhizospheres (circle those that apply)? **Hydrology indicators at Sample Site No. 41 include surface water nine inches deep, water marks, algal mat or crust, inundation visible on aerial imagery, aquatic fauna, thin muck surface, geomorphic position, and a positive FAC-Neutral test. At Sample Site No. 43 indicators include geomorphic position and a positive FAC-Neutral test.**

E. ☒ **Y** ☐ **N** Does the wetland have standing water, and if so what is the average depth in inches? Approximately how much of the wetland is inundated?
Standing water observed at Sample Site No. 41 at the pond edge. Parts of wetland likely inundated in early growing season.

F. How is the hydroperiod (seasonal water level pattern) of the wetland classified?

- ☐ Permanently Flooded
- ☒ Seasonally Flooded (water absent at end of growing season)
- ☐ Saturated (surface water seldom present)
- ☐ Artificially Flooded
- ☐ Artificially Drained

G. ☒ **Y** ☐ **N** Is the wetland a navigable body of water or is a portion of the wetland below the ordinary high-water mark of a navigable water body? List any surface waters associated with the wetland or in proximity to the wetland (note approximate distance from the wetland and navigability determination). Note if there is a surface water connection to other wetlands.
Ditch which flows through the subject plant community area may not be navigable. The constructed pond, however, may be navigable. Pebble Creek, a navigable stream, is about 200 feet away from this plant community area. There is a surface water connection to other wetlands via the ditch which drains to Pebble Creek.

II. VEGETATION

A. Identify the vegetation communities present and the dominant species.

<input type="checkbox"/>	floating leaved community dominated by:
<input type="checkbox"/>	submerged aquatic community dominated by:
<input checked="" type="checkbox"/>	emergent community dominated by: Phalaris arundinacea
<input type="checkbox"/>	shrub community dominated by:
<input type="checkbox"/>	deciduous broad-leaved tree community dominated by:
<input type="checkbox"/>	coniferous tree community dominated by:
<input type="checkbox"/>	open sphagnum mat or bog
<input type="checkbox"/>	sedge meadow/wet prairie community dominated by:
<input checked="" type="checkbox"/>	other (explain): Open water – No dominants listed.

B. Other plant species identified during site visit:

See attached species list

III. SOILS

A. NRCS Soil Map Classification: **Wet alluvial land (Ww); Mundelein silt loam (MzfA) – Somewhat poorly drained**

B. Field description: **Recorded September 6, 2011. See Sample Site Nos. 41 and 43**

☐ Organic (histosol)? If so, is it a muck or a peat?

☐ Mineral soil?

- Mottling, gleying, sulfidic materials, iron or manganese concretions, organic streaking (circle those that apply)
- Soil Description:
- Depth of mottling/gleying:
- Depth of A Horizon:
- Munsell Color of matrix and mottles
 - Matrix below the A horizon:
 - Mottles:

V. SURROUNDING LAND USES

A. What is the estimated area of the wetland watershed in acres? **6.2**

B. What are the surrounding land uses?

LAND-USE	ESTIMATED % OF WETLAND WATERSHED
Developed (Industrial/Commercial/Residential)	23
Agricultural/cropland	--
Agricultural/grazing	--
Forested (Upland)	6
Grassed recreation areas/parks	--
Old field	54
Highways, roads, bike trails	2
Other (specify) : Wetland	15

VI. SITE SKETCH

See attached aerial map exhibit

FUNCTIONAL ASSESSMENT

The following assessment requires the evaluator to examine site conditions that provide evidence that a given functional value is present and to assess the significance of the wetland to perform those functions. Positive answers to questions indicate the presence of factors important for the function. The questions are not definitive and are only provided to guide the evaluation. After completing each section, the evaluator should consider the factors observed and use best professional judgement to rate the significance. The ratings should be recorded on page 1 of the assessment.

SPECIAL FEATURES/"RED FLAGS"

1. ☒ **Y** ☐ **N** Is the wetland in or adjacent to an area of special natural resource interest (NR 103.04, Wis. Adm. Code)? If so, check those that apply:
 - ☒ Cold water community as defined in s. NR 102.04(3)(b), Wis. Adm. Code, including trout streams, their tributaries, and trout lakes
 - ☐ Lakes Michigan and Superior and the Mississippi River
 - ☐ State or federal designated wild and scenic river
 - ☐ Designated state riverway
 - ☐ Designated state scenic urban waterway
 - ☒ Environmentally sensitive area or environmental corridor identified in an area-wide water quality management plan, special area management plan, special wetland inventory study, or an advanced delineation and identification study – **Primary environmental corridor; ADID wetland**
 - ☐ Calcareous fen
 - ☐ State park, forest, trail or recreation area
 - ☐ State and federal fish and wildlife refuges and fish and wildlife management areas
 - ☐ State or federal designated wilderness area
 - ☐ Designated or dedicated state natural area
 - ☐ Wild rice water listed in ch. NR 19.09, Wis. Adm. Code
 - ☐ Surface water identified as an outstanding or exceptional resource water in ch. NR 102, Wis. Adm. Code
2. ☒ **Y** ☐ **N** According to the Natural Heritage Inventory (Bureau of Endangered Resources) or direct observations, are there any rare, endangered, or threatened plant or animal species in, near, or using the wetland or adjacent lands? If so, list the species of concern: **Longear sunfish (*Lepomis megalotis*), a State-designated Threatened species, has been recorded by the Commission staff in Pebble Creek downstream of this location. Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, has been identified by the Commission staff south of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff west of this location. In addition, Natural Heritage Inventory (NHI) identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. This broad NHI finding is based upon an 1845 record for this species typically found in dry prairies. Accordingly, it is very unlikely that this plant community area would support this species.**
3. ☐ **Y** ☒ **N** Is the project located in an area that requires a State Coastal Zone Management Plan consistency determination?

Floral Diversity

1. ☒ **Y** ☐ **N** Does the wetland support a variety of native plant species (i.e. not a monotypic stand of cattail or giant reed grass and/or not dominated by exotic species such as reed canary grass, brome grass, buckthorn, purple loosestrife, etc.)?
2. ☐ **Y** ☒ **N** Is the wetland plant community regionally scarce or rare?

Wildlife and Fishery Habitat

1. List any species observed, evidenced (e.g. tracks, scat, nest/burrow, calls), or expected to utilize the wetland: **Northern pike and Brown trout along with 21 species of cold, cool, and warmwater fish species determined by the Commission staff to be resident fish species in Pebble Creek, connected to this wetland by a ditch/unnamed tributary. Raccon, White-tailed deer, passerine birds, marsh birds, waterfowl, and muskrat utilize this wetland.**

2. ☒ **Y** ☐ **N** Does the wetland contain a number of diverse vegetative cover types and a high degree of interspersed of those vegetation types?
3. ☐ **Y** ☒ **N** Is the estimated ratio of open water to cover between 30 and 70 percent? What is the estimated ratio? **5% - Open water in ditch in early growing season**
4. ☒ **Y** ☐ **N** Does the surrounding upland habitat likely support a variety of animal species?
Class I wildlife habitat
5. ☒ **Y** ☐ **N** Is the wetland part of or associated with a wildlife corridor or designated environmental corridor?
Class I & Wildlife Habitat & Primary environmental corridor
6. ☐ **Y** ☒ **N** Is the surrounding habitat and/or the wetland itself a large tract of undeveloped land important for wildlife that requires large home ranges (e.g. bear, woodland passerines)?
7. ☒ **Y** ☐ **N** Is the surrounding habitat and/or the wetland itself a relatively large tract of undeveloped land within an urbanized environment that is important for wildlife?
8. ☒ **Y** ☐ **N** Are there other wetland areas near the subject wetland that may be important to wildlife?
Important wetlands for wildlife along the Pebble Creek corridor
9. ☒ **Y** ☐ **N** Is the wetland contiguous with a permanent waterbody or periodically inundated for sufficient periods of time to provide spawning/nursery habitat for fish?
The ditch/tributary to Pebble Creek and/or the pond may provide habitat for fish, particularly for Northern pike, because most of this area is within the modeled 2-year recurrence interval floodplain boundary of Pebble Creek which is likely to support spawning habitat.
10. ☒ **Y** ☐ **N** Can the wetland provide significant food base for fish and wildlife (e.g. insects, crustaceans, voles, forage fish, amphibians, reptiles, shrews, wild rice, wild celery, duckweed, pondweeds, watermeal, bulrushes, bur reeds, arrowhead, smartweeds, millets...)?
11. ☐ **Y** ☒ **N** Is the wetland located in a priority watershed/township as identified in the Upper Mississippi and Great Lakes Joint Venture of the North American Waterfowl Management Plan?
12. ☐ **Y** ☒ **N** Is the wetland providing habitat that is scarce to the region?

Flood and Stormwater Storage/Attenuation

1. ☒ **Y** ☐ **N** Are there steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within the watershed (circle those that apply)? **Impervious surfaces to east drain to this wetland.**
2. ☒ **Y** ☐ **N** Does the wetland significantly reduce run-off velocity due to its size, configuration, braided flow patterns, or vegetation type and density? **Runoff velocity is significantly reduced when stormwater runoff enters the subject wetland**
3. ☐ **Y** ☒ **N** Does the wetland show evidence of flashy water level responses to storm events (debris marks, erosion lines, stormwater inputs, channelized inflow)?
4. ☒ **Y** ☐ **N** Is there a natural feature or human-made structure impeding drainage from the wetland that causes backwater conditions? **Construction of pond berm impedes natural flows to Pebble Creek.**
5. ☐ **Y** ☒ **N** Considering the size of the wetland area in relation to the size of its watershed, at any time during the year is water likely to reach the wetland's storage capacity (i.e. the level of easily observable wetland vegetation)? [For some cases where greater documentation is required, one should determine if the wetland has capacity to hold 25% of the run-off from a 2 year-24 hour storm event.]
6. ☒ **Y** ☐ **N** Considering the location of the wetland in relation to the associated surface water watershed, is the wetland important for attenuating or storing flood or stormwater peaks (i.e. is the wetland located in the mid or lower reaches of the watershed)? **The majority of this area is within the modeled 100-year recurrence interval floodplain and floodway boundary.**

Water Quality Protection

1. ☒ **Y** ☐ **N** Does the wetland receive overland flow or direct discharge of stormwater as a primary source of water (circle that which applies)? **Primary source of water likely contributed to wetland from ditch.**
2. ☒ **Y** ☐ **N** Do the surrounding land uses have the potential to deliver significant nutrient and/or sediment loads to the wetland? **Road salt from CTH TT and parking lot to east; potential nutrient loads from nursery operation and from turf grass area to east. Agricultural lands to north may contribute nutrient & sediment loads via the ditch.**
3. ☒ **Y** ☐ **N** Based on your answers to the flood/stormwater section above, does the wetland perform significant flood/stormwater attenuation (residence time to allow settling)?
4. ☒ **Y** ☐ **N** Does the wetland have significant vegetative density to decrease water energy and allow settling of suspended materials?
5. ☒ **Y** ☐ **N** Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface water? **This function, however, is somewhat diminished because of the drainage ditch.**
6. ☐ **Y** ☒ **N** Are algal blooms, heavy macrophyte growth, or other signs of excess nutrient loading to the wetland apparent (or historically reported)?

Shoreline Protection

1. ☒ **Y** ☐ **N** Is the wetland in a lake fringe or riverine setting? If NO, STOP and enter "not applicable" for this function. If YES, then answer the applicable questions. **This wetland plant community area is part of a wetland complex associated with Pebble Creek.**
2. ☐ **Y** ☒ **N** Is the shoreline exposed to constant wave action caused by long wind fetch or boat traffic?
3. ☒ **Y** ☐ **N** Is the shoreline and shallow littoral zone vegetated with submerged or emergent vegetation in the swash zone that decrease wave energy or perennial wetland species that form dense root mats and/or species that have strong stems that are resistant to erosive forces? **This wetland plant community area is part of a wetland complex that provides this function.**
4. ☒ **Y** ☐ **N** Is the stream bank prone to erosion due to unstable soils, land uses, or ice floes? **This wetland plant community area is part of a wetland complex, the shoreline edge of which may experience ice flows.**
5. ☒ **Y** ☐ **N** Is the stream bank vegetated with densely rooted shrubs that provide upper bank stability? **This wetland plant community area is part of a wetland complex that provides this function.**

Groundwater Recharge and Discharge

1. ☒ **Y** ☐ **N** Related to discharge, are there observable (or reported) springs located in the wetland, physical indicators of springs such as marl soil, or vegetation indicators such as watercress or marsh marigold present that tend to indicate the presence of groundwater springs? **Springs reported and observed throughout Pebble Creek watershed; pond may be spring-fed**
2. ☒ **Y** ☐ **N** Related to discharge, may the wetland contribute to the maintenance of base flow in a stream?
3. ☒ **Y** ☐ **N** Related to recharge, is the wetland located on or near a groundwater divide (e.g. a topographic high)? **The majority of this wetland and lands adjacent to this wetland are identified in SEWRPC Planning Report No. 52, A Regional Water Supply Plan for Southeastern Wisconsin, Volumes 1 and 2, as having a high groundwater recharge potential (See map).**

Aesthetics/Recreation/Education and Science

1. ☒ **Y** ☒ **N** Is the wetland visible from any of the following kinds of vantage points: roads, public lands, houses, and/or businesses? (Circle all that apply.)
2. ☒ **Y** ☒ **N** Is the wetland in or near any population centers? **City of Waukesha**
3. **Y** ☒ **N** Is any part of the wetland in public or conservation ownership?
4. **Y** ☒ **N** Does the public have direct access to the wetland from public roads or waterways? (Circle those that apply.)
5. Is the wetland itself relatively free of obvious human influences, such as:
 - a. ☒ **Y** ☒ **N** Buildings?
 - b. ☒ **Y** ☒ **N** Roads?
 - c. ☒ **Y** ☒ **N** Other structures?
 - d. ☒ **Y** ☒ **N** Trash?
 - e. ☒ **Y** ☒ **N** Pollution?
 - f. ☒ **Y** ☒ **N** Filling?
 - g. ☒ **Y** ☒ **N** Dredging/drainage?
 - h. ☒ **Y** ☒ **N** Domination by non-native vegetation?
6. Is the surrounding viewshed relatively free of obvious human influences, such as:
 - a. ☒ **Y** ☒ **N** Buildings?
 - b. ☒ **Y** ☒ **N** Roads?
 - c. ☒ **Y** ☒ **N** Other structures?
7. ☒ **Y** ☒ **N** Is the wetland organized into a variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water)?
8. ☒ **Y** ☒ **N** Does the wetland add to the variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water) within the landscape as a whole?
9. Does the wetland encourage exploration because any of the following factors are present:
 - a. ☒ **Y** ☒ **N** Long views within the wetland?
 - b. ☒ **Y** ☒ **N** Long views in the viewshed adjacent to the wetland?
 - c. ☒ **Y** ☒ **N** Convolutional edges within and/or around the wetland border?
 - d. ☒ **Y** ☒ **N** The wetland provides a different (and perhaps more natural/complex) kind of environment from the surrounding land covers?
10. ☒ **Y** ☒ **N** Is the wetland currently being used for (or does it have the potential to be used for) the following recreational activities? (Check all that apply.) **Currently privately-owned**

ACTIVITY	CURRENT USE	POTENTIAL USE
Nature study/photography		X
Hiking/biking/skiing		X
Hunting/fishing/trapping		X
Boating/canoeing		X
Food harvesting		
Others (list)		

11. ☒ **Y** ☒ **N** Is the wetland currently being used, and/or does it have the potential for use for educational or scientific study purposes (circle that which applies)?

Wisconsin Department of Natural Resources

RAPID ASSESSMENT METHODOLOGY FOR EVALUATING WETLAND FUNCTIONAL VALUES

GENERAL INFORMATION

Name of Wetland: Plant Community Area No. 18
Owner(s): Richard Hase – Tax Key No. WAKT1324995
Location: Waukesha County; SE ¼ Section 7, Township 6N, Range 19E
Project Name: Proposed Waukesha West Bypass
Evaluator(s): Donald M. Reed, PhD., Chief Biologist; Lawrence A. Leitner, PhD., Principal Biologist; Christopher J. Jors, Biologist, Southeastern Wisconsin Regional Planning Commission
Date(s) of Site Visit(s): September 6, 2011

Description of seasonality limitations of this inspection due to time of year of the evaluation and/or current hydrologic and climatologic conditions (e.g. after heavy rains, snow or ice cover, during drought year, during spring flood, during bird migration): **Precipitation records in 2011 indicate normal to below normal precipitation (0 to -1 inches) for June, below normal (-1 to -2 inches) for July, and below normal (-2 to -3 inches) for August.**

WETLAND DESCRIPTION

Wisconsin Wetlands Inventory classification: None
Wetland Type: shallow open water deep marsh shallow marsh seasonally flooded basin bog floodplain forest alder thicket sedge meadow coniferous swamp fen <u>wet meadow</u> shrub-carr low prairie hardwood swamp
Estimated size of wetland in acres: Study area wetland = 0.3 acres

SUMMARY OF FUNCTIONAL VALUES

Based on the results of the attached functional assessment, rate the significance of each of the functional values for the subject wetland and check the appropriate box. Complete the table as a summary.

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	N/A
Floral Diversity		X			
Wildlife Habitat	X				
Fishery Habitat					X
Flood/Stormwater Attenuation	X				
Water Quality Protection	X				
Shoreline Protection					X
Groundwater	X				
Aesthetics/Recreation/Education	X				

List any Special Features/"Red Flags": **Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, has been identified by the Commission staff southeast of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff west of this location. In addition, Natural Heritage Inventory (NHI) identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough**

rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. See page 5 for details.

SITE DESCRIPTION

I. HYDROLOGIC SETTING

A. Describe the geomorphology of the wetland:

- ☒ Depressional (includes slopes, potholes, small lakes, kettles, etc.)
- ☐ Riverine
- ☐ Lake Fringe
- ☐ Extensive Peatland

B. ☒ **N** Has the wetland hydrology been altered by ditching, tiles, dams, culverts, well pumping, diversion of surface flow, or changes to runoff within the watershed (circle those that apply)?
Alterations to hydrology due to agricultural activities to north and landscaping/nursery business.

C. ☒ **N** Does the wetland have an inlet, outlet, or both (circle those that apply)?

D. ☒ **N** Is there any field evidence of wetland hydrology such as buttressed tree trunks, adventitious roots, drift lines, water marks, water stained leaves, soil mottling/gleying, organic soils layer, or oxidized rhizospheres (circle those that apply)? **Appears to receive flows from lands to north during high-water events which spill over into this low area.**

E. ☒ **N** Does the wetland have standing water, and if so what is the average depth in inches? Approximately how much of the wetland is inundated?

F. How is the hydroperiod (seasonal water level pattern) of the wetland classified?

- ☐ Permanently Flooded
- ☐ Seasonally Flooded (water absent at end of growing season)
- ☒ Saturated (surface water seldom present)
- ☐ Artificially Flooded
- ☐ Artificially Drained

G. ☒ **N** Is the wetland a navigable body of water or is a portion of the wetland below the ordinary high-water mark of a navigable water body? List any surface waters associated with the wetland or in proximity to the wetland (note approximate distance from the wetland and navigability determination). Note if there is a surface water connection to other wetlands.
No parts of this wetland are navigable. Pebble Creek, a navigable stream, is about 600 feet southeast of this plant community area. This wetland does not have a surface water connection to other wetlands.

II. VEGETATION

A. Identify the vegetation communities present and the dominant species.

	floating leaved community dominated by:
	submerged aquatic community dominated by:
X	emergent community dominated by: Phalaris arundinacea
	shrub community dominated by:
	deciduous broad-leaved tree community dominated by:
	coniferous tree community dominated by:
	open sphagnum mat or bog
	sedge meadow/wet prairie community dominated by:
	other (explain):

B. Other plant species identified during site visit:

See attached species list

III. SOILS

A. NRCS Soil Map Classification: **Colwood silt loam (Cw) – Poorly drained**

B. Field description: **No Sample Sites in this plant community area**

☐ Organic (histosol)? If so, is it a muck or a peat?

☐ Mineral soil?

- Mottling, gleying, sulfidic materials, iron or manganese concretions, organic streaking (circle those that apply)
- Soil Description:
- Depth of mottling/gleying:
- Depth of A Horizon:
- Munsell Color of matrix and mottles
 - Matrix below the A horizon:
 - Mottles:

V. SURROUNDING LAND USES

A. What is the estimated area of the wetland watershed in acres? **1.9**

B. What are the surrounding land uses?

LAND-USE	ESTIMATED % OF WETLAND WATERSHED
Developed (Industrial/Commercial/Residential)	--
Agricultural/cropland	8
Agricultural/grazing	--
Forested (Upland)	32
Grassed recreation areas/parks	--
Old field	44
Highways, roads, bike trails	--
Other (specify) : Wetland	16

VI. SITE SKETCH

See attached aerial map exhibit

FUNCTIONAL ASSESSMENT

The following assessment requires the evaluator to examine site conditions that provide evidence that a given functional value is present and to assess the significance of the wetland to perform those functions. Positive answers to questions indicate the presence of factors important for the function. The questions are not definitive and are only provided to guide the evaluation. After completing each section, the evaluator should consider the factors observed and use best professional judgement to rate the significance. The ratings should be recorded on page 1 of the assessment.

SPECIAL FEATURES/"RED FLAGS"

1. ☒ **N** Is the wetland in or adjacent to an area of special natural resource interest (NR 103.04, Wis. Adm. Code)? If so, check those that apply:
 - ☐ Cold water community as defined in s. NR 102.04(3)(b), Wis. Adm. Code, including trout streams, their tributaries, and trout lakes
 - ☐ Lakes Michigan and Superior and the Mississippi River
 - ☐ State or federal designated wild and scenic river
 - ☐ Designated state riverway
 - ☐ Designated state scenic urban waterway
 - ☐ Environmentally sensitive area or environmental corridor identified in an area-wide water quality management plan, special area management plan, special wetland inventory study, or an advanced delineation and identification study
 - ☐ Calcareous fen
 - ☐ State park, forest, trail or recreation area
 - ☐ State and federal fish and wildlife refuges and fish and wildlife management areas
 - ☐ State or federal designated wilderness area
 - ☐ Designated or dedicated state natural area
 - ☐ Wild rice water listed in ch. NR 19.09, Wis. Adm. Code
 - ☐ Surface water identified as an outstanding or exceptional resource water in ch. NR 102, Wis. Adm. Code
2. ☒ **N** According to the Natural Heritage Inventory (Bureau of Endangered Resources) or direct observations, are there any rare, endangered, or threatened plant or animal species in, near, or using the wetland or adjacent lands? If so, list the species of concern: **Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, has been identified by the Commission staff southeast of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff west of this location. In addition, Natural Heritage Inventory (NHI) identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. This broad NHI finding is based upon an 1845 record for this species typically found in dry prairies. Accordingly, it is very unlikely that this plant community area would support this species.**
3. ☒ **N** Is the project located in an area that requires a State Coastal Zone Management Plan consistency determination?

Floral Diversity

1. ☒ **N** Does the wetland support a variety of native plant species (i.e. not a monotypic stand of cattail or giant reed grass and/or not dominated by exotic species such as reed canary grass, brome grass, buckthorn, purple loosestrife, etc.)?
2. ☒ **N** Is the wetland plant community regionally scarce or rare?

Wildlife and Fishery Habitat

1. List any species observed, evidenced (e.g. tracks, scat, nest/burrow, calls), or expected to utilize the wetland: **Raccon, White-tailed deer, and song birds utilize this wetland.**
2. ☒ **N** Does the wetland contain a number of diverse vegetative cover types and a high degree of interspersed of those vegetation types?
3. ☒ **N** Is the estimated ratio of open water to cover between 30 and 70 percent? What is the estimated ratio? **0%**

4. **Y**(**N**) Does the surrounding upland habitat likely support a variety of animal species?
No wildlife habitat mapped here.
5. **Y**(**N**) Is the wetland part of or associated with a wildlife corridor or designated environmental corridor?
No environmental corridor mapped here.
6. **Y**(**N**) Is the surrounding habitat and/or the wetland itself a large tract of undeveloped land important for wildlife that requires large home ranges (e.g. bear, woodland passerines)?
7. **Y**(**N**) Is the surrounding habitat and/or the wetland itself a relatively large tract of undeveloped land within an urbanized environment that is important for wildlife?
8. **Y**(**N**) Are there other wetland areas near the subject wetland that may be important to wildlife?
Important wetlands for wildlife along the Pebble Creek corridor
9. **Y**(**N**) Is the wetland contiguous with a permanent waterbody or periodically inundated for sufficient periods of time to provide spawning/nursery habitat for fish?
10. **Y**(**N**) Can the wetland provide significant food base for fish and wildlife (e.g. insects, crustaceans, voles, forage fish, amphibians, reptiles, shrews, wild rice, wild celery, duckweed, pondweeds, watermeal, bulrushes, bur reeds, arrowhead, smartweeds, millets...)?
11. **Y**(**N**) Is the wetland located in a priority watershed/township as identified in the Upper Mississippi and Great Lakes Joint Venture of the North American Waterfowl Management Plan?
12. **Y**(**N**) Is the wetland providing habitat that is scarce to the region?

Flood and Stormwater Storage/Attenuation

1. **Y**(**N**) Are there steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within the watershed (circle those that apply)? **Moderate slopes with row cropping north of this wetland.**
2. **Y**(**N**) Does the wetland significantly reduce run-off velocity due to its size, configuration, braided flow patterns, or vegetation type and density?
3. **Y**(**N**) Does the wetland show evidence of flashy water level responses to storm events (debris marks, erosion lines, stormwater inputs, channelized inflow)?
4. **Y**(**N**) Is there a natural feature or human-made structure impeding drainage from the wetland that causes backwater conditions?
5. **Y**(**N**) Considering the size of the wetland area in relation to the size of its watershed, at any time during the year is water likely to reach the wetland's storage capacity (i.e. the level of easily observable wetland vegetation)? [For some cases where greater documentation is required, one should determine if the wetland has capacity to hold 25% of the run-off from a 2 year-24 hour storm event.] **But is important to note that a portion of this wetland plant community area is within the 100-year floodplain.**
6. **Y**(**N**) Considering the location of the wetland in relation to the associated surface water watershed, is the wetland important for attenuating or storing flood or stormwater peaks (i.e. is the wetland located in the mid or lower reaches of the watershed)? **While a portion of this wetland is within the 100-year floodplain, the size and somewhat isolated nature of this wetland lessen its importance in this function.**

Water Quality Protection

1. **Y**(**N**) Does the wetland receive overland flow or direct discharge of stormwater as a primary source of water (circle that which applies)?

2. ☒ **Y** ☐ **N** Do the surrounding land uses have the potential to deliver significant nutrient and/or sediment loads to the wetland? **Potential nutrient loads from nursery operation. Agricultural lands to north may contribute nutrient & sediment loads.**
3. ☒ **Y** ☐ **N** Based on your answers to the flood/stormwater section above, does the wetland perform significant flood/stormwater attenuation (residence time to allow settling)?
4. ☒ **Y** ☐ **N** Does the wetland have significant vegetative density to decrease water energy and allow settling of suspended materials?
5. ☒ **Y** ☐ **N** Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface water?
6. ☒ **Y** ☐ **N** Are algal blooms, heavy macrophyte growth, or other signs of excess nutrient loading to the wetland apparent (or historically reported)?

Shoreline Protection

1. ☒ **Y** ☐ **N** Is the wetland in a lake fringe or riverine setting? If NO, STOP and enter "not applicable" for this function. If YES, then answer the applicable questions.
2. ☒ **Y** ☐ **N** Is the shoreline exposed to constant wave action caused by long wind fetch or boat traffic?
3. ☒ **Y** ☐ **N** Is the shoreline and shallow littoral zone vegetated with submerged or emergent vegetation in the swash zone that decrease wave energy or perennial wetland species that form dense root mats and/or species that have strong stems that are resistant to erosive forces?
4. ☒ **Y** ☐ **N** Is the stream bank prone to erosion due to unstable soils, land uses, or ice floes?
5. ☒ **Y** ☐ **N** Is the stream bank vegetated with densely rooted shrubs that provide upper bank stability?

Groundwater Recharge and Discharge

1. ☒ **Y** ☐ **N** Related to discharge, are there observable (or reported) springs located in the wetland, physical indicators of springs such as marl soil, or vegetation indicators such as watercress or marsh marigold present that tend to indicate the presence of groundwater springs?
2. ☒ **Y** ☐ **N** Related to discharge, may the wetland contribute to the maintenance of base flow in a stream?
3. ☒ **Y** ☐ **N** Related to recharge, is the wetland located on or near a groundwater divide (e.g. a topographic high)? **This plant community area is identified in SEWRPC Planning Report No. 52, A Regional Water Supply Plan for Southeastern Wisconsin, Volumes 1 and 2, as having a high groundwater recharge potential (See map).**

Aesthetics/Recreation/Education and Science

1. ☒ **Y** ☐ **N** Is the wetland visible from any of the following kinds of vantage points: roads, public lands, houses, and/or businesses? (Circle all that apply.)
2. ☒ **Y** ☐ **N** Is the wetland in or near any population centers? **City of Waukesha**
3. ☒ **Y** ☐ **N** Is any part of the wetland in public or conservation ownership?
4. ☒ **Y** ☐ **N** Does the public have direct access to the wetland from public roads or waterways? (Circle those that apply.)

5. Is the wetland itself relatively free of obvious human influences, such as:

- a. ☒ Y ☒ N Buildings? e. ☒ Y ☒ N Pollution?
b. ☒ Y ☒ N Roads? f. ☒ Y ☒ N Filling?
c. ☒ Y ☒ N Other structures? g. ☒ Y ☒ N Dredging/draining?
d. ☒ Y ☒ N Trash? h. ☒ Y ☒ N Domination by non-native vegetation?

6. Is the surrounding viewshed relatively free of obvious human influences, such as:

- a. ☒ Y ☒ N Buildings?
b. ☒ Y ☒ N Roads?
c. ☒ Y ☒ N Other structures?

7. ☒ Y ☒ N Is the wetland organized into a variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water)?

8. ☒ Y ☒ N Does the wetland add to the variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water) within the landscape as a whole?

9. Does the wetland encourage exploration because any of the following factors are present:

- a. ☒ Y ☒ N Long views within the wetland?
b. ☒ Y ☒ N Long views in the viewshed adjacent to the wetland?
c. ☒ Y ☒ N Convoluted edges within and/or around the wetland border?
d. ☒ Y ☒ N The wetland provides a different (and perhaps more natural/complex) kind of environment from the surrounding land covers?

10. ☒ Y ☒ N Is the wetland currently being used for (or does it have the potential to be used for) the following recreational activities? (Check all that apply.) **Currently privately-owned**

ACTIVITY	CURRENT USE	POTENTIAL USE
Nature study/photography		X
Hiking/biking/skiing		X
Hunting/fishing/trapping		X
Boating/canoeing		
Food harvesting		
Others (list)		

11. ☒ Y ☒ N Is the wetland currently being used, and/or does it have the potential for use for educational or scientific study purposes (circle that which applies)?

Wisconsin Department of Natural Resources

RAPID ASSESSMENT METHODOLOGY FOR EVALUATING WETLAND FUNCTIONAL VALUES

GENERAL INFORMATION

Name of Wetland: Plant Community Area No. 19
Owner(s): School District of Waukesha – Tax Key No. WAKT1321995012 Richard Hase – Tax Key No. WAKT1324995
Location: Waukesha County; NE ¼ & SE ¼ Section 7, Township 6N, Range 19E
Project Name: Proposed Waukesha West Bypass
Evaluator(s): Donald M. Reed, PhD., Chief Biologist; Lawrence A. Leitner, PhD., Principal Biologist; Christopher J. Jors, Biologist, Southeastern Wisconsin Regional Planning Commission
Date(s) of Site Visit(s): September 6 and November 29, 2011

Description of seasonality limitations of this inspection due to time of year of the evaluation and/or current hydrologic and climatologic conditions (e.g. after heavy rains, snow or ice cover, during drought year, during spring flood, during bird migration): **Precipitation records in 2011 indicate normal to below normal precipitation (0 to -1 inches) for June, below normal (-1 to -2 inches) for July, below normal (-2 to -3 inches) for August, above normal (+1 to +2 inches) for September, below normal (-1 to -2 inches) for October, and normal (-0.5 to +0.5 inches) for November.**

WETLAND DESCRIPTION

Wisconsin Wetlands Inventory classification: None
Wetland Type: shallow open water deep marsh <u>shallow marsh</u> seasonally flooded basin bog floodplain forest alder thicket sedge meadow coniferous swamp fen <u>wet meadow</u> <u>shrub-carr</u> low prairie hardwood swamp
Estimated size of wetland in acres: Study area wetland = 1.3 acres

SUMMARY OF FUNCTIONAL VALUES

Based on the results of the attached functional assessment, rate the significance of each of the functional values for the subject wetland and check the appropriate box. Complete the table as a summary.

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	N/A
Floral Diversity		X			
Wildlife Habitat	X				
Fishery Habitat					X
Flood/Stormwater Attenuation		X			
Water Quality Protection		X			
Shoreline Protection					X
Groundwater		X			
Aesthetics/Recreation/Education	X				

List any Special Features/"Red Flags": **Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, has been identified by the Commission staff southeast of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by**

Retzer Nature Center staff west of this location. In addition, Natural Heritage Inventory (NHI) identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. See page 5 for details.

SITE DESCRIPTION

I. HYDROLOGIC SETTING

A. Describe the geomorphology of the wetland:

- ☒ Depressional (includes slopes, potholes, small lakes, kettles, etc.)
☐ Riverine
☐ Lake Fringe
☐ Extensive Peatland

B. ☒ **Y** ☐ **N** Has the wetland hydrology been altered by ditching, tiles, dams, culverts, well pumping, diversion of surface flow, or changes to runoff within the watershed (circle those that apply)?
Alterations to hydrology due to surrounding agricultural activities.

C. ☒ **Y** ☐ **N** Does the wetland have an inlet, outlet, or both (circle those that apply)? **Drainage ditch carries flows southward from this wetland.**

D. ☒ **Y** ☐ **N** Is there any field evidence of wetland hydrology such as buttressed tree trunks, adventitious roots, drift lines, water marks, water stained leaves, soil mottling, gleying, organic soils layer, or oxidized rhizospheres (circle those that apply)? **At Sample Site No. 44, hydrology indicators include saturation at the surface, inundation visible on aerial imagery, dry-season water table at 17 inches below surface, crayfish burrows, geomorphic position, and a positive FAC-Neutral test.**

E. **Y** ☒ **N** Does the wetland have standing water, and if so what is the average depth in inches? Approximately how much of the wetland is inundated? **No standing water observed late in growing season. However, standing water is evident on aerial photos taken in early growing season.**

F. How is the hydroperiod (seasonal water level pattern) of the wetland classified?

- ☐ Permanently Flooded
☐ Seasonally Flooded (water absent at end of growing season)
☒ Saturated (surface water seldom present)
☐ Artificially Flooded
☐ Artificially Drained

G. **Y** ☒ **N** Is the wetland a navigable body of water or is a portion of the wetland below the ordinary high-water mark of a navigable water body? List any surface waters associated with the wetland or in proximity to the wetland (note approximate distance from the wetland and navigability determination). Note if there is a surface water connection to other wetlands.
No parts of this wetland are navigable. Pebble Creek, a navigable stream, is about 600 feet southeast of this plant community area. This wetland has a surface water connection via a ditch to other wetlands.

II. VEGETATION

A. Identify the vegetation communities present and the dominant species.

	floating leaved community dominated by:
	submerged aquatic community dominated by:
X	emergent community dominated by: Phalaris arundinacea & Typha latifolia
X	shrub community dominated by: Salix interior
	deciduous broad-leaved tree community dominated by:
	coniferous tree community dominated by:
	open sphagnum mat or bog
	sedge meadow/wet prairie community dominated by:
	other (explain):

B. Other plant species identified during site visit:

See attached species list

III. SOILS

A. NRCS Soil Map Classification: **Mundelein silt loam (MzfA) – Somewhat poorly drained**

B. Field description: **Sample Site No. 44 recorded on November 29, 2011**

☐ Organic (histosol)? If so, is it a muck or a peat?

☒ Mineral soil?

- Mottling, gleying, sulfidic materials, iron or manganese concretions, organic streaking (circle those that apply)
- Soil Description: **See below**
- Depth of mottling/gleying:
- Depth of A Horizon:
- Munsell Color of matrix and mottles
 - Matrix below the A horizon:
 - Mottles:

Depth (inches)	Matrix Color	Redox Concentrations Color	Redox Concentrations Abundance/Contrast	Texture
0-9	N 2.5/0	--	--	Clay loam
9-18	10Y 5/1	7.5YR 5/8	Common/Prominent	Clay
18-22	10Y 5/1	10GY 5/1 7.5YR 4/6	Common/Faint Common/Prominent	Clay

V. SURROUNDING LAND USES

A. What is the estimated area of the wetland watershed in acres? **21.9**

B. What are the surrounding land uses?

LAND-USE	ESTIMATED % OF WETLAND WATERSHED
Developed (Industrial/Commercial/Residential)	5
Agricultural/cropland	71
Agricultural/grazing	--
Forested (Upland)	1
Grassed recreation areas/parks	--
Old field	3
Highways, roads, bike trails	2
Other (specify) : Wetland	18

VI. SITE SKETCH

See attached aerial map exhibit

FUNCTIONAL ASSESSMENT

The following assessment requires the evaluator to examine site conditions that provide evidence that a given functional value is present and to assess the significance of the wetland to perform those functions. Positive answers to questions indicate the presence of factors important for the function. The questions are not definitive and are only provided to guide the evaluation. After completing each section, the evaluator should consider the factors observed and use best professional judgement to rate the significance. The ratings should be recorded on page 1 of the assessment.

SPECIAL FEATURES/"RED FLAGS"

1. ☒ **N** Is the wetland in or adjacent to an area of special natural resource interest (NR 103.04, Wis. Adm. Code)? If so, check those that apply:
 - ☐ Cold water community as defined in s. NR 102.04(3)(b), Wis. Adm. Code, including trout streams, their tributaries, and trout lakes
 - ☐ Lakes Michigan and Superior and the Mississippi River
 - ☐ State or federal designated wild and scenic river
 - ☐ Designated state riverway
 - ☐ Designated state scenic urban waterway
 - ☐ Environmentally sensitive area or environmental corridor identified in an area-wide water quality management plan, special area management plan, special wetland inventory study, or an advanced delineation and identification study
 - ☐ Calcareous fen
 - ☐ State park, forest, trail or recreation area
 - ☐ State and federal fish and wildlife refuges and fish and wildlife management areas
 - ☐ State or federal designated wilderness area
 - ☐ Designated or dedicated state natural area
 - ☐ Wild rice water listed in ch. NR 19.09, Wis. Adm. Code
 - ☐ Surface water identified as an outstanding or exceptional resource water in ch. NR 102, Wis. Adm. Code
2. ☒ **N** According to the Natural Heritage Inventory (Bureau of Endangered Resources) or direct observations, are there any rare, endangered, or threatened plant or animal species in, near, or using the wetland or adjacent lands? If so, list the species of concern: **Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, has been identified by the Commission staff southeast of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff west of this location. In addition, Natural Heritage Inventory (NHI) identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. This broad NHI finding is based upon an 1845 record for this species typically found in dry prairies. Accordingly, it is very unlikely that this plant community area would support this species.**
3. ☒ **N** Is the project located in an area that requires a State Coastal Zone Management Plan consistency determination?

Floral Diversity

1. ☒ **N** Does the wetland support a variety of native plant species (i.e. not a monotypic stand of cattail or giant reed grass and/or not dominated by exotic species such as reed canary grass, brome grass, buckthorn, purple loosestrife, etc.)?
2. ☒ **N** Is the wetland plant community regionally scarce or rare?

Wildlife and Fishery Habitat

1. List any species observed, evidenced (e.g. tracks, scat, nest/burrow, calls), or expected to utilize the wetland: **Raccon, White-tailed deer, marsh birds, and song birds utilize this wetland.**
2. ☒ **N** Does the wetland contain a number of diverse vegetative cover types and a high degree of interspersed of those vegetation types?
3. ☒ **N** Is the estimated ratio of open water to cover between 30 and 70 percent? What is the estimated ratio? **0%**

4. ☒ ☐ Does the surrounding upland habitat likely support a variety of animal species?
No wildlife habitat mapped here.
5. ☒ ☐ Is the wetland part of or associated with a wildlife corridor or designated environmental corridor?
No environmental corridor mapped here.
6. ☒ ☐ Is the surrounding habitat and/or the wetland itself a large tract of undeveloped land important for wildlife that requires large home ranges (e.g. bear, woodland passerines)?
7. ☒ ☐ Is the surrounding habitat and/or the wetland itself a relatively large tract of undeveloped land within an urbanized environment that is important for wildlife?
8. ☒ ☐ Are there other wetland areas near the subject wetland that may be important to wildlife?
Important wetlands for wildlife along the Pebble Creek corridor
9. ☒ ☐ Is the wetland contiguous with a permanent waterbody or periodically inundated for sufficient periods of time to provide spawning/nursery habitat for fish?
10. ☒ ☐ Can the wetland provide significant food base for fish and wildlife (e.g. insects, crustaceans, voles, forage fish, amphibians, reptiles, shrews, wild rice, wild celery, duckweed, pondweeds, watermeal, bulrushes, bur reeds, arrowhead, smartweeds, millets...)?
11. ☒ ☐ Is the wetland located in a priority watershed/township as identified in the Upper Mississippi and Great Lakes Joint Venture of the North American Waterfowl Management Plan?
12. ☒ ☐ Is the wetland providing habitat that is scarce to the region?

Flood and Stormwater Storage/Attenuation

1. ☒ ☐ Are there steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within the watershed (circle those that apply)? **Moderate slopes with row cropping adjacent to this wetland.**
2. ☒ ☐ Does the wetland significantly reduce run-off velocity due to its size, configuration, braided flow patterns, or vegetation type and density?
3. ☒ ☐ Does the wetland show evidence of flashy water level responses to storm events (debris marks, erosion lines, stormwater inputs, channelized inflow)?
4. ☒ ☐ Is there a natural feature or human-made structure impeding drainage from the wetland that causes backwater conditions?
5. ☒ ☐ Considering the size of the wetland area in relation to the size of its watershed, at any time during the year is water likely to reach the wetland's storage capacity (i.e. the level of easily observable wetland vegetation)? [For some cases where greater documentation is required, one should determine if the wetland has capacity to hold 25% of the run-off from a 2 year-24 hour storm event.] **But it is important to note that portions of this wetland are within the modeled 100-year floodplain.**
6. ☒ ☐ Considering the location of the wetland in relation to the associated surface water watershed, is the wetland important for attenuating or storing flood or stormwater peaks (i.e. is the wetland located in the mid or lower reaches of the watershed)? **Portions of this wetland are within the modeled 100-year floodplain.**

Water Quality Protection

1. ☒ ☐ Does the wetland receive overland flow or direct discharge of stormwater as a primary source of water (circle that which applies)?

2. ☒ Y ☒ N Do the surrounding land uses have the potential to deliver significant nutrient and/or sediment loads to the wetland? **Agricultural lands contribute nutrient & sediment loads.**
3. ☒ Y ☒ N Based on your answers to the flood/stormwater section above, does the wetland perform significant flood/stormwater attenuation (residence time to allow settling)?
4. ☒ Y ☒ N Does the wetland have significant vegetative density to decrease water energy and allow settling of suspended materials?
5. ☒ Y ☒ N Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface water?
6. ☒ Y ☒ N Are algal blooms, heavy macrophyte growth, or other signs of excess nutrient loading to the wetland apparent (or historically reported)?

Shoreline Protection

1. ☒ Y ☒ N Is the wetland in a lake fringe or riverine setting? If NO, STOP and enter "not applicable" for this function. If YES, then answer the applicable questions.
2. ☒ Y ☒ N Is the shoreline exposed to constant wave action caused by long wind fetch or boat traffic?
3. ☒ Y ☒ N Is the shoreline and shallow littoral zone vegetated with submerged or emergent vegetation in the swash zone that decrease wave energy or perennial wetland species that form dense root mats and/or species that have strong stems that are resistant to erosive forces?
4. ☒ Y ☒ N Is the stream bank prone to erosion due to unstable soils, land uses, or ice floes?
5. ☒ Y ☒ N Is the stream bank vegetated with densely rooted shrubs that provide upper bank stability?

Groundwater Recharge and Discharge

1. ☒ Y ☒ N Related to discharge, are there observable (or reported) springs located in the wetland, physical indicators of springs such as marl soil, or vegetation indicators such as watercress or marsh marigold present that tend to indicate the presence of groundwater springs? **Springs reported and observed throughout Pebble Creek watershed**
2. ☒ Y ☒ N Related to discharge, may the wetland contribute to the maintenance of base flow in a stream?
3. ☒ Y ☒ N Related to recharge, is the wetland located on or near a groundwater divide (e.g. a topographic high)? **This plant community area is identified in SEWRPC Planning Report No. 52, A Regional Water Supply Plan for Southeastern Wisconsin, Volumes 1 and 2, as having a high groundwater recharge potential (See map).**

Aesthetics/Recreation/Education and Science

1. ☒ Y ☒ N Is the wetland visible from any of the following kinds of vantage points: ☒ roads, ☒ public lands, ☒ houses, and/or businesses? (Circle all that apply.)
2. ☒ Y ☒ N Is the wetland in or near any population centers? **City of Waukesha**
3. ☒ Y ☒ N Is any part of the wetland in public or conservation ownership?
4. ☒ Y ☒ N Does the public have direct access to the wetland from public roads or waterways? (Circle those that apply.) **While the land is owned by the School District of Waukesha, this land is rented for agricultural purposes and not open for public use.**

5. Is the wetland itself relatively free of obvious human influences, such as:

- a. ☒ Y ☒ N Buildings? e. ☒ Y ☒ N Pollution?
b. ☒ Y ☒ N Roads? f. ☒ Y ☒ N Filling?
c. ☒ Y ☒ N Other structures? g. ☒ Y ☒ N Dredging/drainage?
d. ☒ Y ☒ N Trash? h. ☒ Y ☒ N Domination by non-native vegetation?

6. Is the surrounding viewshed relatively free of obvious human influences, such as:

- a. ☒ Y ☒ N Buildings?
b. ☒ Y ☒ N Roads?
c. ☒ Y ☒ N Other structures?

7. ☒ Y ☒ N Is the wetland organized into a variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water)?

8. ☒ Y ☒ N Does the wetland add to the variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water) within the landscape as a whole?

9. Does the wetland encourage exploration because any of the following factors are present:

- a. ☒ Y ☒ N Long views within the wetland?
b. ☒ Y ☒ N Long views in the viewshed adjacent to the wetland?
c. ☒ Y ☒ N Convoluted edges within and/or around the wetland border?
d. ☒ Y ☒ N The wetland provides a different (and perhaps more natural/complex) kind of environment from the surrounding land covers?

10. ☒ Y ☒ N Is the wetland currently being used for (or does it have the potential to be used for) the following recreational activities? (Check all that apply.) **Not currently used but has potential given that the School District of Waukesha owns the property**

ACTIVITY	CURRENT USE	POTENTIAL USE
Nature study/photography		X
Hiking/biking/skiing		X
Hunting/fishing/trapping		X
Boating/canoeing		
Food harvesting		
Others (list)		

11. ☒ Y ☒ N Is the wetland currently being used, and/or does it have the potential for use for educational or scientific study purposes (circle that which applies)?

Wisconsin Department of Natural Resources

RAPID ASSESSMENT METHODOLOGY FOR EVALUATING WETLAND FUNCTIONAL VALUES

GENERAL INFORMATION

Name of Wetland: Plant Community Area Nos. 20 & 21
Owner(s): School District of Waukesha – Tax Key No. WAKT1321995012
Location: Waukesha County; NE ¼ Section 7, Township 6N, Range 19E
Project Name: Proposed Waukesha West Bypass
Evaluator(s): Donald M. Reed, PhD., Chief Biologist; Lawrence A. Leitner, PhD., Principal Biologist; Christopher J. Jors, Biologist, Southeastern Wisconsin Regional Planning Commission
Date(s) of Site Visit(s): November 29, 2011; April 3, 2012

Description of seasonality limitations of this inspection due to time of year of the evaluation and/or current hydrologic and climatologic conditions (e.g. after heavy rains, snow or ice cover, during drought year, during spring flood, during bird migration): **Post-growing season field inspection in 2011 – verified findings at start of growing season in 2012. Precipitation records in 2011 indicate normal to below normal precipitation (0 to -1 inches) for June, below normal (-1 to -2 inches) for July, below normal (-2 to -3 inches) for August, above normal (+1 to +2 inches) for September, below normal (-1 to -2 inches) for October, and normal (-0.5 to +0.5 inches) for November. Precipitation records for 2012 indicate normal precipitation (-0.5 to +0.5 inches) for February and slightly above normal (+0.5 to +1 inches) for March.**

WETLAND DESCRIPTION

Wisconsin Wetlands Inventory classification: None
Wetland Type: shallow open water deep marsh shallow marsh seasonally flooded basin bog floodplain forest alder thicket sedge meadow coniferous swamp fen <u>atypical (farmed) wetland</u> wet meadow shrub-carr low prairie hardwood swamp
Estimated size of wetland in acres: Study area wetland = 0.6 acres

SUMMARY OF FUNCTIONAL VALUES

Based on the results of the attached functional assessment, rate the significance of each of the functional values for the subject wetland and check the appropriate box. Complete the table as a summary.

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	N/A
Floral Diversity	X				
Wildlife Habitat	X				
Fishery Habitat					X
Flood/Stormwater Attenuation	X				
Water Quality Protection	X				
Shoreline Protection					X
Groundwater		X			
Aesthetics/Recreation/Education	X				

List any Special Features/"Red Flags": **None**

SITE DESCRIPTION

I. HYDROLOGIC SETTING

A. Describe the geomorphology of the wetland:

- ☒ Depressional (includes slopes, potholes, small lakes, kettles, etc.)
☐ Riverine
☐ Lake Fringe
☐ Extensive Peatland

B. ☒ **Y** ☒ **N** Has the wetland hydrology been altered by ditching, tiles, dams, culverts, well pumping, diversion of surface flow, or changes to runoff within the watershed (circle those that apply)?
Alterations to hydrology due to surrounding agricultural activities.

C. ☒ **Y** ☒ **N** Does the wetland have an inlet, outlet, or both (circle those that apply)?

D. ☒ **Y** ☒ **N** Is there any field evidence of wetland hydrology such as buttressed tree trunks, adventitious roots, drift lines, water marks, water stained leaves, soil mottling/gleying, organic soils layer, or oxidized rhizospheres (circle those that apply)? **At Sample Site No. 45, hydrology indicators include saturation at the surface, inundation visible on aerial imagery, dry-season water table at 20 inches below surface, and geomorphic position.**

E. ☒ **Y** ☒ **N** Does the wetland have standing water, and if so what is the average depth in inches? Approximately how much of the wetland is inundated? **No standing water observed late in growing season. Standing water limited to early growing season.**

F. How is the hydroperiod (seasonal water level pattern) of the wetland classified?

- ☐ Permanently Flooded
☐ Seasonally Flooded (water absent at end of growing season)
☒ Saturated (surface water seldom present)
☐ Artificially Flooded
☐ Artificially Drained

G. ☒ **Y** ☒ **N** Is the wetland a navigable body of water or is a portion of the wetland below the ordinary high-water mark of a navigable water body? List any surface waters associated with the wetland or in proximity to the wetland (note approximate distance from the wetland and navigability determination). Note if there is a surface water connection to other wetlands.
No parts of this wetland are navigable. Pebble Creek, a navigable stream, is about 800 feet southeast of these plant community areas.

II. VEGETATION

A. Identify the vegetation communities present and the dominant species.

	floating leaved community dominated by:
	submerged aquatic community dominated by:
	emergent community dominated by:
	shrub community dominated by:
	deciduous broad-leaved tree community dominated by:
	coniferous tree community dominated by:
	open sphagnum mat or bog
	sedge meadow/wet prairie community dominated by:
X	other (explain): Atypical (farmed) wetland – no dominants listed

B. Other plant species identified during site visit:

See attached species list

III. SOILS

A. NRCS Soil Map Classification: **Mundelein silt loam (MzfA) – Somewhat poorly drained**

B. Field description: **Sample Site No. 45 recorded on November 29, 2011**

☐ Organic (histosol)? If so, is it a muck or a peat?

☒ Mineral soil?

- Mottling, gleying, sulfidic materials, iron or manganese concretions, organic streaking (circle those that apply)
- Soil Description: **See below**
- Depth of mottling/gleying:
- Depth of A Horizon:
- Munsell Color of matrix and mottles
 - Matrix below the A horizon:
 - Mottles:

Depth (inches)	Matrix Color	Redox Concentrations Color	Redox Concentrations Abundance/Contrast	Texture
0-11	2.5Y 2.5/1	7.5YR 3/4 2.5Y 3/2	Common/Prominent Common/Faint	Clay loam
11-13.5	2.5Y 3/1	7.5YR 4/6	Common/Prominent	Clay
13.5-22	2.5Y 5/2	7.5YR 5/8	Many/Prominent	Clay

V. SURROUNDING LAND USES

A. What is the estimated area of the wetland watershed in acres? **19.2**

B. What are the surrounding land uses?

LAND-USE	ESTIMATED % OF WETLAND WATERSHED
Developed (Industrial/Commercial/Residential)	--
Agricultural/cropland	83
Agricultural/grazing	--
Forested (Upland)	--
Grassed recreation areas/parks	--
Old field	--
Highways, roads, bike trails	3
Other (specify) : Wetland	14

VI. SITE SKETCH

See attached aerial map exhibit

FUNCTIONAL ASSESSMENT

The following assessment requires the evaluator to examine site conditions that provide evidence that a given functional value is present and to assess the significance of the wetland to perform those functions. Positive answers to questions indicate the presence of factors important for the function. The questions are not definitive and are only provided to guide the evaluation. After completing each section, the evaluator should consider the factors observed and use best professional judgement to rate the significance. The ratings should be recorded on page 1 of the assessment.

SPECIAL FEATURES/"RED FLAGS"

1. **Y(N)** Is the wetland in or adjacent to an area of special natural resource interest (NR 103.04, Wis. Adm. Code)? If so, check those that apply:
 - ☐ Cold water community as defined in s. NR 102.04(3)(b), Wis. Adm. Code, including trout streams, their tributaries, and trout lakes
 - ☐ Lakes Michigan and Superior and the Mississippi River
 - ☐ State or federal designated wild and scenic river
 - ☐ Designated state riverway
 - ☐ Designated state scenic urban waterway
 - ☐ Environmentally sensitive area or environmental corridor identified in an area-wide water quality management plan, special area management plan, special wetland inventory study, or an advanced delineation and identification study
 - ☐ Calcareous fen
 - ☐ State park, forest, trail or recreation area
 - ☐ State and federal fish and wildlife refuges and fish and wildlife management areas
 - ☐ State or federal designated wilderness area
 - ☐ Designated or dedicated state natural area
 - ☐ Wild rice water listed in ch. NR 19.09, Wis. Adm. Code
 - ☐ Surface water identified as an outstanding or exceptional resource water in ch. NR 102, Wis. Adm. Code
2. **Y(N)** According to the Natural Heritage Inventory (Bureau of Endangered Resources) or direct observations, are there any rare, endangered, or threatened plant or animal species in, near, or using the wetland or adjacent lands? If so, list the species of concern: **Natural Heritage Inventory (NHI) identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. This broad NHI finding is based upon an 1845 record for this species typically found in dry prairies. Accordingly, it is very unlikely that this plant community area would support this species. In addition, other species documented in the area including Blanding's turtle and Butler's garter snake are unlikely to use this actively farmed wetland area.**
3. **Y(N)** Is the project located in an area that requires a State Coastal Zone Management Plan consistency determination?

Floral Diversity

1. **Y(N)** Does the wetland support a variety of native plant species (i.e. not a monotypic stand of cattail or giant reed grass and/or not dominated by exotic species such as reed canary grass, brome grass, buckthorn, purple loosestrife, etc.)?
2. **Y(N)** Is the wetland plant community regionally scarce or rare?

Wildlife and Fishery Habitat

1. List any species observed, evidenced (e.g. tracks, scat, nest/burrow, calls), or expected to utilize the wetland: **White-tailed deer, Raccoon, and various bird species may feed on agricultural crops.**
2. **Y(N)** Does the wetland contain a number of diverse vegetative cover types and a high degree of interspersed of those vegetation types?
3. **Y(N)** Is the estimated ratio of open water to cover between 30 and 70 percent? What is the estimated ratio? **0%**
4. **Y(N)** Does the surrounding upland habitat likely support a variety of animal species?
No wildlife habitat mapped here.

5. ☒ ☐ Is the wetland part of or associated with a wildlife corridor or designated environmental corridor?
No environmental corridor mapped here.
6. ☒ ☐ Is the surrounding habitat and/or the wetland itself a large tract of undeveloped land important for wildlife that requires large home ranges (e.g. bear, woodland passerines)?
7. ☒ ☐ Is the surrounding habitat and/or the wetland itself a relatively large tract of undeveloped land within an urbanized environment that is important for wildlife?
8. ☒ ☐ Are there other wetland areas near the subject wetland that may be important to wildlife?
Important wetlands for wildlife along the Pebble Creek corridor
9. ☒ ☐ Is the wetland contiguous with a permanent waterbody or periodically inundated for sufficient periods of time to provide spawning/nursery habitat for fish?
10. ☒ ☐ Can the wetland provide significant food base for fish and wildlife (e.g. insects, crustaceans, voles, forage fish, amphibians, reptiles, shrews, wild rice, wild celery, duckweed, pondweeds, watermeal, bulrushes, bur reeds, arrowhead, smartweeds, millets...)?
11. ☒ ☐ Is the wetland located in a priority watershed/township as identified in the Upper Mississippi and Great Lakes Joint Venture of the North American Waterfowl Management Plan?
12. ☒ ☐ Is the wetland providing habitat that is scarce to the region?

Flood and Stormwater Storage/Attenuation

1. ☒ ☐ Are there steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within the watershed (circle those that apply)? **Moderate slopes with row cropping adjacent to & within this wetland.**
2. ☒ ☐ Does the wetland significantly reduce run-off velocity due to its size, configuration, braided flow patterns, or vegetation type and density?
3. ☒ ☐ Does the wetland show evidence of flashy water level responses to storm events (debris marks, erosion lines, stormwater inputs, channelized inflow)?
4. ☒ ☐ Is there a natural feature or human-made structure impeding drainage from the wetland that causes backwater conditions?
5. ☒ ☐ Considering the size of the wetland area in relation to the size of its watershed, at any time during the year is water likely to reach the wetland's storage capacity (i.e. the level of easily observable wetland vegetation)? [For some cases where greater documentation is required, one should determine if the wetland has capacity to hold 25% of the run-off from a 2 year-24 hour storm event.]
6. ☒ ☐ Considering the location of the wetland in relation to the associated surface water watershed, is the wetland important for attenuating or storing flood or stormwater peaks (i.e. is the wetland located in the mid or lower reaches of the watershed)? **Would be important if allowed to re-vegetate**

Water Quality Protection

1. ☒ ☐ Does the wetland receive overland flow or direct discharge of stormwater as a primary source of water (circle that which applies)?
2. ☒ ☐ Do the surrounding land uses have the potential to deliver significant nutrient and/or sediment loads to the wetland? **Agricultural lands contribute nutrient & sediment loads.**
3. ☒ ☐ Based on your answers to the flood/stormwater section above, does the wetland perform significant flood/stormwater attenuation (residence time to allow settling)?

4. **Y**(**N**) Does the wetland have significant vegetative density to decrease water energy and allow settling of suspended materials?
5. **Y**(**N**) Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface water?
6. **Y**(**N**) Are algal blooms, heavy macrophyte growth, or other signs of excess nutrient loading to the wetland apparent (or historically reported)?

Shoreline Protection

1. **Y**(**N**) Is the wetland in a lake fringe or riverine setting? If NO, STOP and enter "not applicable" for this function. If YES, then answer the applicable questions.
2. **Y N** Is the shoreline exposed to constant wave action caused by long wind fetch or boat traffic?
3. **Y N** Is the shoreline and shallow littoral zone vegetated with submerged or emergent vegetation in the swash zone that decrease wave energy or perennial wetland species that form dense root mats and/or species that have strong stems that are resistant to erosive forces?
4. **Y N** Is the stream bank prone to erosion due to unstable soils, land uses, or ice floes?
5. **Y N** Is the stream bank vegetated with densely rooted shrubs that provide upper bank stability?

Groundwater Recharge and Discharge

1. **Y**(**N**) Related to discharge, are there observable (or reported) springs located in the wetland, physical indicators of springs such as marl soil, or vegetation indicators such as watercress or marsh marigold present that tend to indicate the presence of groundwater springs? **Springs reported and observed throughout Pebble Creek watershed. Because of the landscape position, these plant community areas may support seasonal groundwater seepages.**
2. **Y**(**N**) Related to discharge, may the wetland contribute to the maintenance of base flow in a stream?
3. **Y**(**N**) Related to recharge, is the wetland located on or near a groundwater divide (e.g. a topographic high)? **This plant community area is identified in SEWRPC Planning Report No. 52, A Regional Water Supply Plan for Southeastern Wisconsin, Volumes 1 and 2, as having a high groundwater recharge potential (See map).**

Aesthetics/Recreation/Education and Science

1. **Y**(**N**) Is the wetland visible from any of the following kinds of vantage points: (**roads**, public lands, **houses**, and/or businesses? (Circle all that apply.)
2. **Y**(**N**) Is the wetland in or near any population centers? **City of Waukesha**
3. **Y**(**N**) Is any part of the wetland in public or conservation ownership?
4. **Y**(**N**) Does the public have direct access to the wetland from public roads or waterways? (Circle those that apply.) **While the land is owned by the School District of Waukesha, this land is rented for agricultural purposes and not open for public use.**

5. Is the wetland itself relatively free of obvious human influences, such as:

- a. ☒ Y ☒ N Buildings? e. ☒ Y ☒ N Pollution?
b. ☒ Y ☒ N Roads? f. ☒ Y ☒ N Filling?
c. ☒ Y ☒ N Other structures? g. ☒ Y ☒ N Dredging/drainage?
d. ☒ Y ☒ N Trash? h. ☒ Y ☒ N Domination by non-native vegetation?

6. Is the surrounding viewshed relatively free of obvious human influences, such as:

- a. ☒ Y ☒ N Buildings?
b. ☒ Y ☒ N Roads?
c. ☒ Y ☒ N Other structures?

7. ☒ Y ☒ N Is the wetland organized into a variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water)?

8. ☒ Y ☒ N Does the wetland add to the variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water) within the landscape as a whole?

9. Does the wetland encourage exploration because any of the following factors are present:

- a. ☒ Y ☒ N Long views within the wetland?
b. ☒ Y ☒ N Long views in the viewshed adjacent to the wetland?
c. ☒ Y ☒ N Convoluted edges within and/or around the wetland border?
d. ☒ Y ☒ N The wetland provides a different (and perhaps more natural/complex) kind of environment from the surrounding land covers?

10. ☒ Y ☒ N Is the wetland currently being used for (or does it have the potential to be used for) the following recreational activities? (Check all that apply.) **Not currently used but has potential given that the School District of Waukesha owns the property**

ACTIVITY	CURRENT USE	POTENTIAL USE
Nature study/photography		X
Hiking/biking/skiing		X
Hunting/fishing/trapping		X
Boating/canoeing		
Food harvesting		
Others (list)		

11. ☒ Y ☒ N Is the wetland currently being used, and/or does it have the potential for use for educational or scientific study purposes (circle that which applies)?

Wisconsin Department of Natural Resources

RAPID ASSESSMENT METHODOLOGY FOR EVALUATING WETLAND FUNCTIONAL VALUES

GENERAL INFORMATION

Name of Wetland: Plant Community Area Nos. 22
Owner(s): FHB Investments, LLC – Tax Key No. WAKC1317002 Waukesha County Parks & Land Use – Tax Key No. WAKT1319999
Location: Waukesha County; NE ¼ & SE ¼ Section 6, Township 6N, Range 19E
Project Name: Proposed Waukesha West Bypass
Evaluator(s): Donald M. Reed, PhD., Chief Biologist; Lawrence A. Leitner, PhD., Principal Biologist; Christopher J. Jors, Biologist, Southeastern Wisconsin Regional Planning Commission
Date(s) of Site Visit(s): August 30 & September 6, 2011

Description of seasonality limitations of this inspection due to time of year of the evaluation and/or current hydrologic and climatologic conditions (e.g. after heavy rains, snow or ice cover, during drought year, during spring flood, during bird migration): **Precipitation records in 2011 indicate normal to below normal precipitation (0 to -1 inches) for June, below normal (-1 to -2 inches) for July, below normal (-2 to -3 inches) for August, above normal (+1 to +2 inches) for September.**

WETLAND DESCRIPTION

Wisconsin Wetlands Inventory classification: E2H
Wetland Type: shallow open water deep marsh <u>shallow marsh</u> seasonally flooded basin bog floodplain forest alder thicket <u>sedge meadow</u> coniferous swamp fen atypical (farmed) wetland <u>wet meadow</u> shrub-carr low prairie hardwood swamp
Estimated size of wetland in acres: Study area wetland =1.9 acres

SUMMARY OF FUNCTIONAL VALUES

Based on the results of the attached functional assessment, rate the significance of each of the functional values for the subject wetland and check the appropriate box. Complete the table as a summary.

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	N/A
Floral Diversity		X			
Wildlife Habitat			X		
Fishery Habitat		X			
Flood/Stormwater Attenuation		X			
Water Quality Protection			X		
Shoreline Protection		X			
Groundwater		X			
Aesthetics/Recreation/Education			X		

List any Special Features/"Red Flags": **Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, has been identified by the Commission staff southeast of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center and Waukesha County staff west of this location. In addition, Natural Heritage**

Inventory (NHI) identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. See page 5 for details.

SITE DESCRIPTION

I. HYDROLOGIC SETTING

A. Describe the geomorphology of the wetland:

- ☐ Depressional (includes slopes, potholes, small lakes, kettles, etc.)
- ☒ Riverine
- ☐ Lake Fringe
- ☐ Extensive Peatland

B. ☒ **Y** ☐ **N** Has the wetland hydrology been altered by ditching, tiles, dams, culverts, well pumping, diversion of surface flow, or changes to runoff within the watershed (circle those that apply)?

Alterations to hydrology due surrounding residential development

C. ☒ **Y** ☐ **N** Does the wetland have an inlet, outlet, or both (circle those that apply)? **A tributary to Pebble Creek passes through this wetland.**

D. ☒ **Y** ☐ **N** Is there any field evidence of wetland hydrology such as buttressed tree trunks, adventitious roots, drift lines, water marks, water stained leaves, soil mottling, gleying, organic soils layer, or oxidized rhizospheres (circle those that apply)? **At Sample Site No. 49, hydrology indicators include saturation at the surface, water-stained leaves, dry-season water table at 14 inches below surface, geomorphic position, and positive FAC-Neutral test. At Sample Site No. 51, indicators include geomorphic position and a positive FAC-Neutral test.**

E. ☒ **Y** ☐ **N** Does the wetland have standing water, and if so what is the average depth in inches? Approximately how much of the wetland is inundated? **Other than stream channel itself, standing water limited to early growing season. Approximately 1 % of wetland inundated when measuring stream channel area.**

F. How is the hydroperiod (seasonal water level pattern) of the wetland classified?

- ☐ Permanently Flooded
- ☒ Seasonally Flooded (water absent at end of growing season)
- ☐ Saturated (surface water seldom present)
- ☐ Artificially Flooded
- ☐ Artificially Drained

G. ☒ **Y** ☐ **N** Is the wetland a navigable body of water or is a portion of the wetland below the ordinary high-water mark of a navigable water body? List any surface waters associated with the wetland or in proximity to the wetland (note approximate distance from the wetland and navigability determination). Note if there is a surface water connection to other wetlands.

This tributary to Pebble Creek which runs through the subject wetland is likely navigable. This tributary provides a surface water connection to other wetlands.

II. VEGETATION

A. Identify the vegetation communities present and the dominant species.

	floating leaved community dominated by:
	submerged aquatic community dominated by:
X	emergent community dominated by: Typha latifolia, Phalaris arundinacea, and Solidago altissima
	shrub community dominated by:
	deciduous broad-leaved tree community dominated by:
	coniferous tree community dominated by:
	open sphagnum mat or bog
X	sedge meadow/wet prairie community dominated by: Carex stricta
	other (explain):

B. Other plant species identified during site visit:

See attached species list

III. SOILS

A. NRCS Soil Map Classification: **Wallkill silt loam (Wa) – Poorly drained; Pella silt loam (Ph) – Poorly drained; and Houghton muck (HtA) – Very poorly drained**

B. Field description: **See Sample Site Nos. 49 and 51 recorded on August 30 and September 6, 2011, respectively.**

☐ Organic (histosol)? If so, is it a muck or a peat?

☐ Mineral soil?

- Mottling, gleying, sulfidic materials, iron or manganese concretions, organic streaking (circle those that apply)
- Soil Description:
- Depth of mottling/gleying:
- Depth of A Horizon:
- Munsell Color of matrix and mottles
 - Matrix below the A horizon:
 - Mottles:

V. SURROUNDING LAND USES

A. What is the estimated area of the wetland watershed in acres? **155**

B. What are the surrounding land uses?

LAND-USE	ESTIMATED % OF WETLAND WATERSHED
Developed (Industrial/Commercial/Residential)	64
Agricultural/cropland	--
Agricultural/grazing	--
Forested (Upland)	--
Grassed recreation areas/parks	11
Old field	2
Highways, roads, bike trails	13
Other (specify) : Wetland	10

VI. SITE SKETCH

See attached aerial map exhibit

FUNCTIONAL ASSESSMENT

The following assessment requires the evaluator to examine site conditions that provide evidence that a given functional value is present and to assess the significance of the wetland to perform those functions. Positive answers to questions indicate the presence of factors important for the function. The questions are not definitive and are only provided to guide the evaluation. After completing each section, the evaluator should consider the factors observed and use best professional judgement to rate the significance. The ratings should be recorded on page 1 of the assessment.

SPECIAL FEATURES/"RED FLAGS"

1. ☒ **Y** ☐ **N** Is the wetland in or adjacent to an area of special natural resource interest (NR 103.04, Wis. Adm. Code)? If so, check those that apply:
 - ☒ Cold water community as defined in s. NR 102.04(3)(b), Wis. Adm. Code, including trout streams, their tributaries, and trout lakes
 - ☐ Lakes Michigan and Superior and the Mississippi River
 - ☐ State or federal designated wild and scenic river
 - ☐ Designated state riverway
 - ☐ Designated state scenic urban waterway
 - ☒ Environmentally sensitive area or environmental corridor identified in an area-wide water quality management plan, special area management plan, special wetland inventory study, or an advanced delineation and identification study - **Primary environmental corridor; ADID wetland**
 - ☐ Calcareous fen
 - ☐ State park, forest, trail or recreation area
 - ☐ State and federal fish and wildlife refuges and fish and wildlife management areas
 - ☐ State or federal designated wilderness area
 - ☐ Designated or dedicated state natural area
 - ☐ Wild rice water listed in ch. NR 19.09, Wis. Adm. Code
 - ☐ Surface water identified as an outstanding or exceptional resource water in ch. NR 102, Wis. Adm. Code
2. ☒ **Y** ☐ **N** According to the Natural Heritage Inventory (Bureau of Endangered Resources) or direct observations, are there any rare, endangered, or threatened plant or animal species in, near, or using the wetland or adjacent lands? If so, list the species of concern: **Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, has been identified by the Commission staff southeast of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff west of this location. In addition, Natural Heritage Inventory (NHI) identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. This broad NHI finding is based upon an 1845 record for this species typically found in dry prairies. Accordingly, it is very unlikely that this plant community area would support this species.**
3. ☐ **Y** ☒ **N** Is the project located in an area that requires a State Coastal Zone Management Plan consistency determination?

Floral Diversity

1. ☒ **Y** ☐ **N** Does the wetland support a variety of native plant species (i.e. not a monotypic stand of cattail or giant reed grass and/or not dominated by exotic species such as reed canary grass, brome grass, buckthorn, purple loosestrife, etc.)?
2. ☐ **Y** ☒ **N** Is the wetland plant community regionally scarce or rare?

Wildlife and Fishery Habitat

1. List any species observed, evidenced (e.g. tracks, scat, nest/burrow, calls), or expected to utilize the wetland: **An unnamed tributary connects this wetland to the Upper Pebble Creek Reach – 1 (UP-1) that contains a total of 11 species of fishes including primary coldwater (Mottled sculpin), secondary coolwater, and warmwater assemblages. Macroinvertebrate abundance and diversity are indicative of fair water quality conditions in this UP-1 reach. Raccon, White-tailed deer, passerine birds, marsh birds, waterfowl, and muskrat utilize this plant community area.**

2. ☒ **Y** ☐ **N** Does the wetland contain a number of diverse vegetative cover types and a high degree of interspersed of those vegetation types?
3. ☐ **Y** ☒ **N** Is the estimated ratio of open water to cover between 30 and 70 percent? What is the estimated ratio? **5% - Open water in creek bed**
4. ☒ **Y** ☐ **N** Does the surrounding upland habitat likely support a variety of animal species?
Class II & III wildlife habitat mapped in surrounding uplands.
5. ☒ **Y** ☐ **N** Is the wetland part of or associated with a wildlife corridor or designated environmental corridor?
Primary environmental corridor & Class I wildlife habitat.
6. ☐ **Y** ☒ **N** Is the surrounding habitat and/or the wetland itself a large tract of undeveloped land important for wildlife that requires large home ranges (e.g. bear, woodland passerines)?
7. ☒ **Y** ☐ **N** Is the surrounding habitat and/or the wetland itself a relatively large tract of undeveloped land within an urbanized environment that is important for wildlife?
8. ☒ **Y** ☐ **N** Are there other wetland areas near the subject wetland that may be important to wildlife?
Important wetlands for wildlife along this corridor following tributary to Pebble Creek.
9. ☒ **Y** ☐ **N** Is the wetland contiguous with a permanent waterbody or periodically inundated for sufficient periods of time to provide spawning/nursery habitat for fish?
10. ☒ **Y** ☐ **N** Can the wetland provide significant food base for fish and wildlife (e.g. insects, crustaceans, voles, forage fish, amphibians, reptiles, shrews, wild rice, wild celery, duckweed, pondweeds, watermeal, bulrushes, bur reeds, arrowhead, smartweeds, millets...)?
11. ☐ **Y** ☒ **N** Is the wetland located in a priority watershed/township as identified in the Upper Mississippi and Great Lakes Joint Venture of the North American Waterfowl Management Plan?
12. ☐ **Y** ☒ **N** Is the wetland providing habitat that is scarce to the region?

Flood and Stormwater Storage/Attenuation

1. ☒ **Y** ☐ **N** Are there steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within the watershed (circle those that apply)?
2. ☒ **Y** ☐ **N** Does the wetland significantly reduce run-off velocity due to its size, configuration, braided flow patterns, or vegetation type and density?
3. ☐ **Y** ☒ **N** Does the wetland show evidence of flashy water level responses to storm events (debris marks, erosion lines, stormwater inputs, channelized inflow)?
4. ☐ **Y** ☒ **N** Is there a natural feature or human-made structure impeding drainage from the wetland that causes backwater conditions?
5. ☐ **Y** ☒ **N** Considering the size of the wetland area in relation to the size of its watershed, at any time during the year is water likely to reach the wetland's storage capacity (i.e. the level of easily observable wetland vegetation)? [For some cases where greater documentation is required, one should determine if the wetland has capacity to hold 25% of the run-off from a 2 year-24 hour storm event.]
6. ☒ **Y** ☐ **N** Considering the location of the wetland in relation to the associated surface water watershed, is the wetland important for attenuating or storing flood or stormwater peaks (i.e. is the wetland located in the mid or lower reaches of the watershed)? **Although this area is outside the 100-year recurrence interval floodplain boundary for Pebble Creek, it is important for attenuating & storing flood & stormwater peaks for this sub-basin.**

Water Quality Protection

1. ☒ Y ☒ N Does the wetland receive overland flow or direct discharge of stormwater as a primary source of water (circle that which applies)?
2. ☒ Y ☒ N Do the surrounding land uses have the potential to deliver significant nutrient and/or sediment loads to the wetland? **Residential development contributes nutrient loads when lawn fertilizers are applied. In addition, road salt runoff occurs from the many impervious surfaces which drain to this wetland.**
3. ☒ Y ☒ N Based on your answers to the flood/stormwater section above, does the wetland perform significant flood/stormwater attenuation (residence time to allow settling)?
4. ☒ Y ☒ N Does the wetland have significant vegetative density to decrease water energy and allow settling of suspended materials?
5. ☒ Y ☒ N Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface water?
6. ☒ Y ☒ N Are algal blooms, heavy macrophyte growth, or other signs of excess nutrient loading to the wetland apparent (or historically reported)?

Shoreline Protection

1. ☒ Y ☒ N Is the wetland in a lake fringe or riverine setting? If NO, STOP and enter "not applicable" for this function. If YES, then answer the applicable questions.
2. ☒ Y ☒ N Is the shoreline exposed to constant wave action caused by long wind fetch or boat traffic?
3. ☒ Y ☒ N Is the shoreline and shallow littoral zone vegetated with submerged or emergent vegetation in the swash zone that decrease wave energy or perennial wetland species that form dense root mats and/or species that have strong stems that are resistant to erosive forces?
4. ☒ Y ☒ N Is the stream bank prone to erosion due to unstable soils, land uses, or ice floes?
5. ☒ Y ☒ N Is the stream bank vegetated with densely rooted shrubs that provide upper bank stability?

Groundwater Recharge and Discharge

1. ☒ Y ☒ N Related to discharge, are there observable (or reported) springs located in the wetland, physical indicators of springs such as marl soil, or vegetation indicators such as watercress or marsh marigold present that tend to indicate the presence of groundwater springs? **Sloped wetlands within this plant community area likely contain groundwater seepage areas.**
2. ☒ Y ☒ N Related to discharge, may the wetland contribute to the maintenance of base flow in a stream?
3. ☒ Y ☒ N Related to recharge, is the wetland located on or near a groundwater divide (e.g. a topographic high)?

Aesthetics/Recreation/Education and Science

1. ☒ Y ☒ N Is the wetland visible from any of the following kinds of vantage points: roads, public lands, houses and/or businesses? (Circle all that apply.)
2. ☒ Y ☒ N Is the wetland in or near any population centers? **City of Waukesha**

3. ☒ Y ☒ N Is any part of the wetland in public or conservation ownership? **Waukesha County owns a portion.**
4. ☒ Y ☒ N Does the public have direct access to the wetland from public roads or waterways? (Circle those that apply.) **Access from CTH TT and Madison Street through Waukesha County-owned properties.**
5. Is the wetland itself relatively free of obvious human influences, such as:
- a. ☒ Y ☒ N Buildings?
 - b. ☒ Y ☒ N Roads?
 - c. ☒ Y ☒ N Other structures?
 - d. ☒ Y ☒ N Trash?
 - e. ☒ Y ☒ N Pollution?
 - f. ☒ Y ☒ N Filling?
 - g. ☒ Y ☒ N Dredging/drainage?
 - h. ☒ Y ☒ N Domination by non-native vegetation?
6. Is the surrounding viewshed relatively free of obvious human influences, such as:
- a. ☒ Y ☒ N Buildings?
 - b. ☒ Y ☒ N Roads?
 - c. ☒ Y ☒ N Other structures?
7. ☒ Y ☒ N Is the wetland organized into a variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water)?
8. ☒ Y ☒ N Does the wetland add to the variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water) within the landscape as a whole?
9. Does the wetland encourage exploration because any of the following factors are present:
- a. ☒ Y ☒ N Long views within the wetland?
 - b. ☒ Y ☒ N Long views in the viewshed adjacent to the wetland?
 - c. ☒ Y ☒ N Convolved edges within and/or around the wetland border?
 - d. ☒ Y ☒ N The wetland provides a different (and perhaps more natural/complex) kind of environment from the surrounding land covers?
10. ☒ Y ☒ N Is the wetland currently being used for (or does it have the potential to be used for) the following recreational activities? (Check all that apply.) **Potential use on Waukesha County-owned properties**

ACTIVITY	CURRENT USE	POTENTIAL USE
Nature study/photography		X
Hiking/biking/skiing		X
Hunting/fishing/trapping		X
Boating/canoeing		X
Food harvesting		
Others (list)		

11. ☒ Y ☒ N Is the wetland currently being used, and/or does it have the potential for use for educational or scientific study purposes (circle that which applies)?

Wisconsin Department of Natural Resources

RAPID ASSESSMENT METHODOLOGY FOR EVALUATING WETLAND FUNCTIONAL VALUES

GENERAL INFORMATION

Name of Wetland: Plant Community Area Nos. 23
Owner(s): City of Waukesha - Tax Key No. WAKC1315999 Christoph Family Trust – Tax Key No. WAKT1320998
Location: Waukesha County; NE ¼ & SE ¼ Section 6, Township 6N, Range 19E
Project Name: Proposed Waukesha West Bypass
Evaluator(s): Donald M. Reed, PhD., Chief Biologist; Lawrence A. Leitner, PhD., Principal Biologist; Christopher J. Jors, Biologist, Southeastern Wisconsin Regional Planning Commission
Date(s) of Site Visit(s): September 6, 2011

Description of seasonality limitations of this inspection due to time of year of the evaluation and/or current hydrologic and climatologic conditions (e.g. after heavy rains, snow or ice cover, during drought year, during spring flood, during bird migration): **Precipitation records in 2011 indicate normal to below normal precipitation (0 to -1 inches) for June, below normal (-1 to -2 inches) for July, below normal (-2 to -3 inches) for August, above normal (+1 to +2 inches) for September.**

WETLAND DESCRIPTION

Wisconsin Wetlands Inventory classification: S3/E2K
Wetland Type: shallow open water deep marsh shallow marsh seasonally flooded basin bog floodplain forest alder thicket sedge meadow coniferous swamp fen atypical (farmed) wetland wet meadow shrub-carr low prairie hardwood swamp
Estimated size of wetland in acres: Study area wetland = 0.3 acres

SUMMARY OF FUNCTIONAL VALUES

Based on the results of the attached functional assessment, rate the significance of each of the functional values for the subject wetland and check the appropriate box. Complete the table as a summary.

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	N/A
Floral Diversity		X			
Wildlife Habitat		X			
Fishery Habitat		X			
Flood/Stormwater Attenuation		X			
Water Quality Protection		X			
Shoreline Protection		X			
Groundwater	X				
Aesthetics/Recreation/Education		X			

List any Special Features/"Red Flags": **Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, has been identified by the Commission staff southeast of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff west of this location. In addition, Natural Heritage Inventory (NHI)**

identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. See page 5 for details.

SITE DESCRIPTION

I. HYDROLOGIC SETTING

A. Describe the geomorphology of the wetland:

- ☐ Depressional (includes slopes, potholes, small lakes, kettles, etc.)
- ☒ Riverine
- ☐ Lake Fringe
- ☐ Extensive Peatland

B. **Y** **N** Has the wetland hydrology been altered by ditching, tiles, dams, culverts, well pumping, diversion of surface flow, or changes to runoff within the watershed (circle those that apply)?
Alterations to hydrology due surrounding residential development

C. **Y** **N** Does the wetland have an inlet, outlet, or both (circle those that apply)? **A tributary to Pebble Creek passes through this wetland.**

D. **Y** **N** Is there any field evidence of wetland hydrology such as buttressed tree trunks, adventitious roots, drift lines, water marks, water stained leaves, soil mottling/gleying, organic soils layer, or oxidized rhizospheres (circle those that apply)? **Drift lines observed adjacent to creek.**

E. **Y** **N** Does the wetland have standing water, and if so what is the average depth in inches? Approximately how much of the wetland is inundated? **Other than stream channel itself, no standing water observed late in growing season.**

F. How is the hydroperiod (seasonal water level pattern) of the wetland classified?

- ☐ Permanently Flooded
- ☒ Seasonally Flooded (water absent at end of growing season)
- ☐ Saturated (surface water seldom present)
- ☐ Artificially Flooded
- ☐ Artificially Drained

G. **Y** **N** Is the wetland a navigable body of water or is a portion of the wetland below the ordinary high-water mark of a navigable water body? List any surface waters associated with the wetland or in proximity to the wetland (note approximate distance from the wetland and navigability determination). Note if there is a surface water connection to other wetlands.
This tributary to Pebble Creek which runs through the subject wetland is likely navigable.
This tributary provides a surface water connection to other wetlands.

II. VEGETATION

A. Identify the vegetation communities present and the dominant species.

	floating leaved community dominated by:
	submerged aquatic community dominated by:
X	emergent community dominated by: Phalaris arundinacea
	shrub community dominated by:
X	deciduous broad-leaved tree community dominated by: Acer negundo & Fraxinus pennsylvanica
	coniferous tree community dominated by:
	open sphagnum mat or bog
	sedge meadow/wet prairie community dominated by:
	other (explain):

B. Other plant species identified during site visit:

See attached species list

III. SOILS

A. NRCS Soil Map Classification: **Lamartine silt loam (LmB) - Somewhat poorly drained; and Pistakee silt loam (PrA) – Somewhat poorly drained**

B. Field description: **No sample sites recorded for this plant community area**

☐ Organic (histosol)? If so, is it a muck or a peat?

☐ Mineral soil?

- Mottling, gleying, sulfidic materials, iron or manganese concretions, organic streaking (circle those that apply)
- Soil Description:
- Depth of mottling/gleying:
- Depth of A Horizon:
- Munsell Color of matrix and mottles
 - Matrix below the A horizon:
 - Mottles:

V. SURROUNDING LAND USES

A. What is the estimated area of the wetland watershed in acres? **127**

B. What are the surrounding land uses?

LAND-USE	ESTIMATED % OF WETLAND WATERSHED
Developed (Industrial/Commercial/Residential)	66
Agricultural/cropland	--
Agricultural/grazing	--
Forested (Upland)	--
Grassed recreation areas/parks	13
Old field	--
Highways, roads, bike trails	11
Other (specify) : Wetland	10

VI. SITE SKETCH

See attached aerial map exhibit

FUNCTIONAL ASSESSMENT

The following assessment requires the evaluator to examine site conditions that provide evidence that a given functional value is present and to assess the significance of the wetland to perform those functions. Positive answers to questions indicate the presence of factors important for the function. The questions are not definitive and are only provided to guide the evaluation. After completing each section, the evaluator should consider the factors observed and use best professional judgement to rate the significance. The ratings should be recorded on page 1 of the assessment.

SPECIAL FEATURES/"RED FLAGS"

1. ☒ **Y** ☐ **N** Is the wetland in or adjacent to an area of special natural resource interest (NR 103.04, Wis. Adm. Code)? If so, check those that apply:
 - ☒ Cold water community as defined in s. NR 102.04(3)(b), Wis. Adm. Code, including trout streams, their tributaries, and trout lakes
 - ☐ Lakes Michigan and Superior and the Mississippi River
 - ☐ State or federal designated wild and scenic river
 - ☐ Designated state riverway
 - ☐ Designated state scenic urban waterway
 - ☐ Environmentally sensitive area or environmental corridor identified in an area-wide water quality management plan, special area management plan, special wetland inventory study, or an advanced delineation and identification study
 - ☐ Calcareous fen
 - ☐ State park, forest, trail or recreation area
 - ☐ State and federal fish and wildlife refuges and fish and wildlife management areas
 - ☐ State or federal designated wilderness area
 - ☐ Designated or dedicated state natural area
 - ☐ Wild rice water listed in ch. NR 19.09, Wis. Adm. Code
 - ☐ Surface water identified as an outstanding or exceptional resource water in ch. NR 102, Wis. Adm. Code
2. ☒ **Y** ☐ **N** According to the Natural Heritage Inventory (Bureau of Endangered Resources) or direct observations, are there any rare, endangered, or threatened plant or animal species in, near, or using the wetland or adjacent lands? If so, list the species of concern: **Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, has been identified by the Commission staff southeast of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff west of this location. In addition, Natural Heritage Inventory (NHI) identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. This broad NHI finding is based upon an 1845 record for this species typically found in dry prairies. Accordingly, it is very unlikely that this plant community area would support this species.**
3. ☐ **Y** ☒ **N** Is the project located in an area that requires a State Coastal Zone Management Plan consistency determination?

Floral Diversity

1. ☒ **Y** ☐ **N** Does the wetland support a variety of native plant species (i.e. not a monotypic stand of cattail or giant reed grass and/or not dominated by exotic species such as reed canary grass, brome grass, buckthorn, purple loosestrife, etc.)?
2. ☐ **Y** ☒ **N** Is the wetland plant community regionally scarce or rare?

Wildlife and Fishery Habitat

1. List any species observed, evidenced (e.g. tracks, scat, nest/burrow, calls), or expected to utilize the wetland: **An unnamed tributary connects this wetland to the Upper Pebble Creek Reach – 1 (UP-1) that contains a total of 11 species of fishes including primary coldwater (Mottled sculpin), secondary coolwater, and warmwater assemblages. Macroinvertebrate abundance and diversity are indicative of fair water quality conditions in this UP-1 reach. Raccon, White-tailed deer, and passerine birds utilize this plant community area.**

2. ☒ ☐ Does the wetland contain a number of diverse vegetative cover types and a high degree of interspersed of those vegetation types?
3. ☒ ☐ Is the estimated ratio of open water to cover between 30 and 70 percent? What is the estimated ratio? **5% - Open water in creek bed**
4. ☒ ☐ Does the surrounding upland habitat likely support a variety of animal species?
Mostly surrounded by residential development
5. ☒ ☐ Is the wetland part of or associated with a wildlife corridor or designated environmental corridor?
Class I wildlife habitat; no environmental corridor.
6. ☒ ☐ Is the surrounding habitat and/or the wetland itself a large tract of undeveloped land important for wildlife that requires large home ranges (e.g. bear, woodland passerines)?
7. ☒ ☐ Is the surrounding habitat and/or the wetland itself a relatively large tract of undeveloped land within an urbanized environment that is important for wildlife? **The wetland itself is important as a wildlife corridor within an urbanized area.**
8. ☒ ☐ Are there other wetland areas near the subject wetland that may be important to wildlife?
Important wetlands for wildlife immediately west of this area.
9. ☒ ☐ Is the wetland contiguous with a permanent waterbody or periodically inundated for sufficient periods of time to provide spawning/nursery habitat for fish?
10. ☒ ☐ Can the wetland provide significant food base for fish and wildlife (e.g. insects, crustaceans, voles, forage fish, amphibians, reptiles, shrews, wild rice, wild celery, duckweed, pondweeds, watermeal, bulrushes, bur reeds, arrowhead, smartweeds, millets...)?
11. ☒ ☐ Is the wetland located in a priority watershed/township as identified in the Upper Mississippi and Great Lakes Joint Venture of the North American Waterfowl Management Plan?
12. ☒ ☐ Is the wetland providing habitat that is scarce to the region?

Flood and Stormwater Storage/Attenuation

1. ☒ ☐ Are there steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within the watershed (circle those that apply)?
2. ☒ ☐ Does the wetland significantly reduce run-off velocity due to its size, configuration, braided flow patterns, or vegetation type and density?
3. ☒ ☐ Does the wetland show evidence of flashy water level responses to storm events (debris marks, erosion lines, stormwater inputs, channelized inflow)? **Drift lines observed along stream channel**
4. ☒ ☐ Is there a natural feature or human-made structure impeding drainage from the wetland that causes backwater conditions? **CTH TT road bed blocks natural flows and redirects to bridge under roadway.**
5. ☒ ☐ Considering the size of the wetland area in relation to the size of its watershed, at any time during the year is water likely to reach the wetland's storage capacity (i.e. the level of easily observable wetland vegetation)? [For some cases where greater documentation is required, one should determine if the wetland has capacity to hold 25% of the run-off from a 2 year-24 hour storm event.]
6. ☒ ☐ Considering the location of the wetland in relation to the associated surface water watershed, is the wetland important for attenuating or storing flood or stormwater peaks (i.e. is the wetland located in the mid or lower reaches of the watershed)? **Although this area is outside the 100-year recurrence interval floodplain boundary for Pebble Creek, it is important for attenuating & storing flood & stormwater peaks for this sub-basin.**

Water Quality Protection

1. ☒ Y ☒ N Does the wetland receive overland flow or direct discharge of stormwater as a primary source of water (circle that which applies)?
2. ☒ Y ☒ N Do the surrounding land uses have the potential to deliver significant nutrient and/or sediment loads to the wetland? **Residential development contributes nutrient loads when lawn fertilizers are applied. Agricultural lands to south contribute nutrients from fertilizers and sediments. In addition, road salt runoff occurs from the many impervious surfaces which drain to this wetland.**
3. ☒ Y ☒ N Based on your answers to the flood/stormwater section above, does the wetland perform significant flood/stormwater attenuation (residence time to allow settling)?
4. ☒ Y ☒ N Does the wetland have significant vegetative density to decrease water energy and allow settling of suspended materials?
5. ☒ Y ☒ N Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface water?
6. ☒ Y ☒ N Are algal blooms, heavy macrophyte growth, or other signs of excess nutrient loading to the wetland apparent (or historically reported)?

Shoreline Protection

1. ☒ Y ☒ N Is the wetland in a lake fringe or riverine setting? If NO, STOP and enter "not applicable" for this function. If YES, then answer the applicable questions.
2. ☒ Y ☒ N Is the shoreline exposed to constant wave action caused by long wind fetch or boat traffic?
3. ☒ Y ☒ N Is the shoreline and shallow littoral zone vegetated with submerged or emergent vegetation in the swash zone that decrease wave energy or perennial wetland species that form dense root mats and/or species that have strong stems that are resistant to erosive forces?
4. ☒ Y ☒ N Is the stream bank prone to erosion due to unstable soils, land uses, or ice floes?
5. ☒ Y ☒ N Is the stream bank vegetated with densely rooted shrubs that provide upper bank stability?

Groundwater Recharge and Discharge

1. ☒ Y ☒ N Related to discharge, are there observable (or reported) springs located in the wetland, physical indicators of springs such as marl soil, or vegetation indicators such as watercress or marsh marigold present that tend to indicate the presence of groundwater springs?
2. ☒ Y ☒ N Related to discharge, may the wetland contribute to the maintenance of base flow in a stream?
3. ☒ Y ☒ N Related to recharge, is the wetland located on or near a groundwater divide (e.g. a topographic high)?

Aesthetics/Recreation/Education and Science

1. ☒ Y ☒ N Is the wetland visible from any of the following kinds of vantage points: roads, public lands, houses and/or businesses? (Circle all that apply.)
2. ☒ Y ☒ N Is the wetland in or near any population centers? **City of Waukesha**

3. ☒ **Y** ☐ **N** Is any part of the wetland in public or conservation ownership? **City of Waukesha owns a portion.**

4. ☒ **Y** ☐ **N** Does the public have direct access to the wetland from public roads or waterways? (Circle those that apply.) **Access from CTH TT through City-owned property.**

5. Is the wetland itself relatively free of obvious human influences, such as:

- a. ☒ **Y** ☐ **N** Buildings? e. ☒ **Y** ☐ **N** Pollution?
b. ☒ **Y** ☐ **N** Roads? f. ☒ **Y** ☐ **N** Filling?
c. ☒ **Y** ☐ **N** Other structures? g. ☒ **Y** ☐ **N** Dredging/drainage?
d. ☒ **Y** ☐ **N** Trash? h. ☒ **Y** ☐ **N** Domination by non-native vegetation?

6. Is the surrounding viewshed relatively free of obvious human influences, such as:

- a. ☒ **Y** ☐ **N** Buildings?
b. ☒ **Y** ☐ **N** Roads?
c. ☒ **Y** ☐ **N** Other structures?

7. ☒ **Y** ☐ **N** Is the wetland organized into a variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water)?

8. ☒ **Y** ☐ **N** Does the wetland add to the variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water) within the landscape as a whole?

9. Does the wetland encourage exploration because any of the following factors are present:

- a. ☒ **Y** ☐ **N** Long views within the wetland?
b. ☒ **Y** ☐ **N** Long views in the viewshed adjacent to the wetland?
c. ☒ **Y** ☐ **N** Convolved edges within and/or around the wetland border?
d. ☒ **Y** ☐ **N** The wetland provides a different (and perhaps more natural/complex) kind of environment from the surrounding land covers?

10. ☒ **Y** ☐ **N** Is the wetland currently being used for (or does it have the potential to be used for) the following recreational activities? (Check all that apply.) **Potential use on City-owned property**

ACTIVITY	CURRENT USE	POTENTIAL USE
Nature study/photography		X
Hiking/biking/skiing		X
Hunting/fishing/trapping		X
Boating/canoeing		X
Food harvesting		
Others (list)		

11. ☒ **Y** ☐ **N** Is the wetland currently being used, and/or does it have the potential for use for educational or scientific study purposes (circle that which applies)?

Wisconsin Department of Natural Resources

RAPID ASSESSMENT METHODOLOGY FOR EVALUATING WETLAND FUNCTIONAL VALUES

GENERAL INFORMATION

Name of Wetland: Plant Community Area No. 24
Owner(s): Waukesha County – CTH TT Right-of-Way
Location: Waukesha County; NE ¼ Section 6, Township 6N, Range 19E
Project Name: Proposed Waukesha West Bypass
Evaluator(s): Donald M. Reed, PhD., Chief Biologist; Lawrence A. Leitner, PhD., Principal Biologist; Christopher J. Jors, Biologist, Southeastern Wisconsin Regional Planning Commission
Date(s) of Site Visit(s): September 8, 2011

Description of seasonality limitations of this inspection due to time of year of the evaluation and/or current hydrologic and climatologic conditions (e.g. after heavy rains, snow or ice cover, during drought year, during spring flood, during bird migration): **Precipitation records in 2011 indicate normal to below normal precipitation (0 to -1 inches) for June, below normal (-1 to -2 inches) for July, and below normal (-2 to -3 inches) for August.**

WETLAND DESCRIPTION

Wisconsin Wetlands Inventory classification: None
Wetland Type: shallow open water deep marsh shallow marsh seasonally flooded basin bog floodplain forest alder thicket sedge meadow coniferous swamp fen wet meadow shrub-carr low prairie <u>hardwood swamp</u>
Estimated size of wetland in acres: Study area wetland = 0.2 acres

SUMMARY OF FUNCTIONAL VALUES

Based on the results of the attached functional assessment, rate the significance of each of the functional values for the subject wetland and check the appropriate box. Complete the table as a summary.

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	N/A
Floral Diversity	X				
Wildlife Habitat	X				
Fishery Habitat					X
Flood/Stormwater Attenuation	X				
Water Quality Protection	X				
Shoreline Protection					X
Groundwater	X				
Aesthetics/Recreation/Education	X				

List any Special Features/"Red Flags": **Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, has been identified by the Commission staff south of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff west of this location. In addition, Natural Heritage Inventory (NHI) identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough rattlesnake root**

SITE DESCRIPTION

I. HYDROLOGIC SETTING

A. Describe the geomorphology of the wetland:

- ☒ Depressional (includes slopes, potholes, small lakes, kettles, etc.)
☐ Riverine
☐ Lake Fringe
☐ Extensive Peatland

B. ☒ **Y** ☒ **N** Has the wetland hydrology been altered by ditching, tiles, dams, culverts, well pumping, diversion of surface flow, or changes to runoff within the watershed (circle those that apply)?
Alterations to hydrology due to road construction and surrounding residential and commercial development.

C. ☒ **Y** ☒ **N** Does the wetland have an inlet, outlet, or both (circle those that apply)?

D. ☒ **Y** ☒ **N** Is there any field evidence of wetland hydrology such as buttressed tree trunks, adventitious roots, drift lines, water marks, water stained leaves, soil mottling, gleying, organic soils layer, or oxidized rhizospheres (circle those that apply)? **At Sample Site No. 53, hydrology indicators include drift deposits, water-stained leaves, oxidized rhizospheres, crayfish burrows, geomorphic position, and a positive FAC-Neutral test.**

E. ☒ **Y** ☒ **N** Does the wetland have standing water, and if so what is the average depth in inches? Approximately how much of the wetland is inundated? **Likely only standing water in the early growing season.**

F. How is the hydroperiod (seasonal water level pattern) of the wetland classified?

- ☐ Permanently Flooded
☒ Seasonally Flooded (water absent at end of growing season)
☐ Saturated (surface water seldom present)
☐ Artificially Flooded
☐ Artificially Drained

G. ☒ **Y** ☒ **N** Is the wetland a navigable body of water or is a portion of the wetland below the ordinary high-water mark of a navigable water body? List any surface waters associated with the wetland or in proximity to the wetland (note approximate distance from the wetland and navigability determination). Note if there is a surface water connection to other wetlands.
No part of this wetland is navigable. This wetland does not have a surface water connection to other wetlands.

II. VEGETATION

A. Identify the vegetation communities present and the dominant species.

	floating leaved community dominated by:
	submerged aquatic community dominated by:
	emergent community dominated by:
	shrub community dominated by:
X	deciduous broad-leaved tree community dominated by: Populus deltoides, Ulmus americana, and Acer negundo
	coniferous tree community dominated by:
	open sphagnum mat or bog
	sedge meadow/wet prairie community dominated by:
	other (explain):

B. Other plant species identified during site visit:

See attached species list

III. SOILS

A. NRCS Soil Map Classification: **Lamartine silt loam (LmB) – Somewhat poorly drained**

B. Field description: **Sample Site No. 53 recorded on September 8, 2011**

☐ Organic (histosol)? If so, is it a muck or a peat?

☒ Mineral soil?

- Mottling, gleying, sulfidic materials, iron or manganese concretions, organic streaking (circle those that apply)
- Soil Description: **See below**
- Depth of mottling/gleying:
- Depth of A Horizon:
- Munsell Color of matrix and mottles
 - Matrix below the A horizon:
 - Mottles:

Depth (inches)	Matrix Color	Redox Concentrations Color	Redox Concentrations Abundance/Contrast	Texture
0-9	N 2.5/0	7.5YR 4/6	Common/Prominent	Silt loam
9-19	5Y 2.5/1	5B 7/1 7.5YR 4/6	Few/Prominent Common/Prominent	Clay loam
19-21	2.5Y 3/1	7.5YR 4/6	Many/Prominent	Clay
21-27	2.5Y 4/1 N 3/0	7.5YR 5/4 - 5/6	Many/Prominent	Silty clay

V. SURROUNDING LAND USES

A. What is the estimated area of the wetland watershed in acres? **17.4**

B. What are the surrounding land uses?

LAND-USE	ESTIMATED % OF WETLAND WATERSHED
Developed (Industrial/Commercial/Residential)	79
Agricultural/cropland	--
Agricultural/grazing	--
Forested (Upland)	--
Grassed recreation areas/parks	--
Old field	--
Highways, roads, bike trails	17
Other (specify) : Wetland	4

VI. SITE SKETCH

See attached aerial map exhibit

FUNCTIONAL ASSESSMENT

The following assessment requires the evaluator to examine site conditions that provide evidence that a given functional value is present and to assess the significance of the wetland to perform those functions. Positive answers to questions indicate the presence of factors important for the function. The questions are not definitive and are only provided to guide the evaluation. After completing each section, the evaluator should consider the factors observed and use best professional judgement to rate the significance. The ratings should be recorded on page 1 of the assessment.

SPECIAL FEATURES/"RED FLAGS"

1. ☒ **N** Is the wetland in or adjacent to an area of special natural resource interest (NR 103.04, Wis. Adm. Code)? If so, check those that apply:
 - ☐ Cold water community as defined in s. NR 102.04(3)(b), Wis. Adm. Code, including trout streams, their tributaries, and trout lakes
 - ☐ Lakes Michigan and Superior and the Mississippi River
 - ☐ State or federal designated wild and scenic river
 - ☐ Designated state riverway
 - ☐ Designated state scenic urban waterway
 - ☐ Environmentally sensitive area or environmental corridor identified in an area-wide water quality management plan, special area management plan, special wetland inventory study, or an advanced delineation and identification study
 - ☐ Calcareous fen
 - ☐ State park, forest, trail or recreation area
 - ☐ State and federal fish and wildlife refuges and fish and wildlife management areas
 - ☐ State or federal designated wilderness area
 - ☐ Designated or dedicated state natural area
 - ☐ Wild rice water listed in ch. NR 19.09, Wis. Adm. Code
 - ☐ Surface water identified as an outstanding or exceptional resource water in ch. NR 102, Wis. Adm. Code
2. ☒ **N** According to the Natural Heritage Inventory (Bureau of Endangered Resources) or direct observations, are there any rare, endangered, or threatened plant or animal species in, near, or using the wetland or adjacent lands? If so, list the species of concern: **Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, has been identified by the Commission staff south of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff west of this location. In addition, Natural Heritage Inventory (NHI) identifies a broad area (Waukesha Township, T6N R19E), as having the potential to contain Rough rattlesnake root (*Prenanthes aspera*), a State-designated Endangered species. This broad NHI finding is based upon an 1845 record for this species typically found in dry prairies. Accordingly, it is very unlikely that this plant community area would support this species.**
3. ☒ **N** Is the project located in an area that requires a State Coastal Zone Management Plan consistency determination?

Floral Diversity

1. ☒ **N** Does the wetland support a variety of native plant species (i.e. not a monotypic stand of cattail or giant reed grass and/or not dominated by exotic species such as reed canary grass, brome grass, buckthorn, purple loosestrife, etc.)?
2. ☒ **N** Is the wetland plant community regionally scarce or rare?

Wildlife and Fishery Habitat

1. List any species observed, evidenced (e.g. tracks, scat, nest/burrow, calls), or expected to utilize the wetland: **Raccon, White-tailed deer, and song birds utilize this wetland.**
2. ☒ **N** Does the wetland contain a number of diverse vegetative cover types and a high degree of interspersed of those vegetation types?
3. ☒ **N** Is the estimated ratio of open water to cover between 30 and 70 percent? What is the estimated ratio? **0%**

4. ☒ **Y** ☐ **N** Does the surrounding upland habitat likely support a variety of animal species?
Class II wildlife habitat mapped just east of this area.
5. ☒ **Y** ☐ **N** Is the wetland part of or associated with a wildlife corridor or designated environmental corridor?
No environmental corridor mapped here.
6. ☒ **Y** ☐ **N** Is the surrounding habitat and/or the wetland itself a large tract of undeveloped land important for wildlife that requires large home ranges (e.g. bear, woodland passerines)?
7. ☒ **Y** ☐ **N** Is the surrounding habitat and/or the wetland itself a relatively large tract of undeveloped land within an urbanized environment that is important for wildlife?
8. ☒ **Y** ☐ **N** Are there other wetland areas near the subject wetland that may be important to wildlife?
9. ☒ **Y** ☐ **N** Is the wetland contiguous with a permanent waterbody or periodically inundated for sufficient periods of time to provide spawning/nursery habitat for fish?
10. ☒ **Y** ☐ **N** Can the wetland provide significant food base for fish and wildlife (e.g. insects, crustaceans, voles, forage fish, amphibians, reptiles, shrews, wild rice, wild celery, duckweed, pondweeds, watermeal, bulrushes, bur reeds, arrowhead, smartweeds, millets...)?
11. ☒ **Y** ☐ **N** Is the wetland located in a priority watershed/township as identified in the Upper Mississippi and Great Lakes Joint Venture of the North American Waterfowl Management Plan?
12. ☒ **Y** ☐ **N** Is the wetland providing habitat that is scarce to the region?

Flood and Stormwater Storage/Attenuation

1. ☒ **Y** ☐ **N** Are there steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within the watershed (circle those that apply)? **Substantial impervious surfaces related to surrounding development**
2. ☒ **Y** ☐ **N** Does the wetland significantly reduce run-off velocity due to its size, configuration, braided flow patterns, or vegetation type and density?
3. ☒ **Y** ☐ **N** Does the wetland show evidence of flashy water level responses to storm events (debris marks, erosion lines, stormwater inputs, channelized inflow)?
4. ☒ **Y** ☐ **N** Is there a natural feature or human-made structure impeding drainage from the wetland that causes backwater conditions? **CTH TT road bed impedes natural drainage to east – culvert carries higher flows under CTH TT.**
5. ☒ **Y** ☐ **N** Considering the size of the wetland area in relation to the size of its watershed, at any time during the year is water likely to reach the wetland's storage capacity (i.e. the level of easily observable wetland vegetation)? [For some cases where greater documentation is required, one should determine if the wetland has capacity to hold 25% of the run-off from a 2 year-24 hour storm event.]
6. ☒ **Y** ☐ **N** Considering the location of the wetland in relation to the associated surface water watershed, is the wetland important for attenuating or storing flood or stormwater peaks (i.e. is the wetland located in the mid or lower reaches of the watershed)?

Water Quality Protection

1. ☒ **Y** ☐ **N** Does the wetland receive overland flow or direct discharge of stormwater as a primary source of water (circle that which applies)?

2. ☒ **Y** ☐ **N** Do the surrounding land uses have the potential to deliver significant nutrient and/or sediment loads to the wetland? **Road salt from roadways. Surrounding development contributes fertilizer loads.**
3. ☒ **Y** ☐ **N** Based on your answers to the flood/stormwater section above, does the wetland perform significant flood/stormwater attenuation (residence time to allow settling)?
4. ☒ **Y** ☐ **N** Does the wetland have significant vegetative density to decrease water energy and allow settling of suspended materials?
5. ☒ **Y** ☐ **N** Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface water?
6. ☒ **Y** ☐ **N** Are algal blooms, heavy macrophyte growth, or other signs of excess nutrient loading to the wetland apparent (or historically reported)?

Shoreline Protection

1. ☒ **Y** ☐ **N** Is the wetland in a lake fringe or riverine setting? If NO, STOP and enter "not applicable" for this function. If YES, then answer the applicable questions.
2. ☒ **Y** ☐ **N** Is the shoreline exposed to constant wave action caused by long wind fetch or boat traffic?
3. ☒ **Y** ☐ **N** Is the shoreline and shallow littoral zone vegetated with submerged or emergent vegetation in the swash zone that decrease wave energy or perennial wetland species that form dense root mats and/or species that have strong stems that are resistant to erosive forces?
4. ☒ **Y** ☐ **N** Is the stream bank prone to erosion due to unstable soils, land uses, or ice floes?
5. ☒ **Y** ☐ **N** Is the stream bank vegetated with densely rooted shrubs that provide upper bank stability?

Groundwater Recharge and Discharge

1. ☒ **Y** ☐ **N** Related to discharge, are there observable (or reported) springs located in the wetland, physical indicators of springs such as marl soil, or vegetation indicators such as watercress or marsh marigold present that tend to indicate the presence of groundwater springs?
2. ☒ **Y** ☐ **N** Related to discharge, may the wetland contribute to the maintenance of base flow in a stream?
3. ☒ **Y** ☐ **N** Related to recharge, is the wetland located on or near a groundwater divide (e.g. a topographic high)? **This plant community area is identified in SEWRPC Planning Report No. 52, A Regional Water Supply Plan for Southeastern Wisconsin, Volumes 1 and 2, as having a high groundwater recharge potential (See map).**

Aesthetics/Recreation/Education and Science

1. ☒ **Y** ☐ **N** Is the wetland visible from any of the following kinds of vantage points: ☒ **roads**, ☐ **public lands**, ☒ **houses**, and/or ☒ **businesses**? (Circle all that apply.)
2. ☒ **Y** ☐ **N** Is the wetland in or near any population centers? **City of Waukesha**
3. ☒ **Y** ☐ **N** Is any part of the wetland in public or conservation ownership?
4. ☒ **Y** ☐ **N** Does the public have direct access to the wetland from public roads or waterways? (Circle those that apply.)

5. Is the wetland itself relatively free of obvious human influences, such as:

- a. Y ☒ N Buildings? e. Y ☒ N Pollution?
b. Y ☒ N Roads? f. Y ☒ N Filling?
c. Y ☒ N Other structures? g. Y ☒ N Dredging/drainage?
d. Y ☒ N Trash? h. Y ☒ N Domination by non-native vegetation?

6. Is the surrounding viewshed relatively free of obvious human influences, such as:

- a. Y ☒ N Buildings?
b. Y ☒ N Roads?
c. Y ☒ N Other structures?

7. Y ☒ N Is the wetland organized into a variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water)?

8. Y ☒ N Does the wetland add to the variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water) within the landscape as a whole?

9. Does the wetland encourage exploration because any of the following factors are present:

- a. Y ☒ N Long views within the wetland?
b. Y ☒ N Long views in the viewshed adjacent to the wetland?
c. Y ☒ N Convoluted edges within and/or around the wetland border?
d. Y ☒ N The wetland provides a different (and perhaps more natural/complex) kind of environment from the surrounding land covers?

10. Y ☒ N Is the wetland currently being used for (or does it have the potential to be used for) the following recreational activities? (Check all that apply.)

ACTIVITY	CURRENT USE	POTENTIAL USE
Nature study/photography		
Hiking/biking/skiing		
Hunting/fishing/trapping		
Boating/canoeing		
Food harvesting		
Others (list)		

11. Y ☒ N Is the wetland currently being used, and/or does it have the potential for use for educational or scientific study purposes (circle that which applies)?

Wisconsin Department of Natural Resources

RAPID ASSESSMENT METHODOLOGY FOR EVALUATING WETLAND FUNCTIONAL VALUES

GENERAL INFORMATION

Name of Wetland: Plant Community Area No. 25
Owner(s): Waukesha County – CTH TT Right-of-Way
Location: Waukesha County; SW ¼ Section 32, Township 7N, Range 19E
Project Name: Proposed Waukesha West Bypass
Evaluator(s): Donald M. Reed, PhD., Chief Biologist; Lawrence A. Leitner, PhD., Principal Biologist; Christopher J. Jors, Biologist, Southeastern Wisconsin Regional Planning Commission
Date(s) of Site Visit(s): September 8, 2011

Description of seasonality limitations of this inspection due to time of year of the evaluation and/or current hydrologic and climatologic conditions (e.g. after heavy rains, snow or ice cover, during drought year, during spring flood, during bird migration): **Precipitation records in 2011 indicate normal to below normal precipitation (0 to -1 inches) for June, below normal (-1 to -2 inches) for July, and below normal (-2 to -3 inches) for August.**

WETLAND DESCRIPTION

Wisconsin Wetlands Inventory classification: None
Wetland Type: shallow open water deep marsh shallow marsh seasonally flooded basin bog floodplain forest <u>alder thicket</u> sedge meadow coniferous swamp <u>fen</u> <u>wet meadow</u> shrub-carr low prairie <u>hardwood swamp</u>
Estimated size of wetland in acres: Study area wetland = 0.1 acres

SUMMARY OF FUNCTIONAL VALUES

Based on the results of the attached functional assessment, rate the significance of each of the functional values for the subject wetland and check the appropriate box. Complete the table as a summary.

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	N/A
Floral Diversity	X				
Wildlife Habitat	X				
Fishery Habitat					X
Flood/Stormwater Attenuation	X				
Water Quality Protection	X				
Shoreline Protection					X
Groundwater	X				
Aesthetics/Recreation/Education	X				

List any Special Features/"Red Flags": **Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, has been identified by the Commission staff south of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff west of this location.**

SITE DESCRIPTION

I. HYDROLOGIC SETTING

A. Describe the geomorphology of the wetland:

- ☒ Depressional (includes slopes, potholes, small lakes, kettles, etc.)
- ☐ Riverine
- ☐ Lake Fringe
- ☐ Extensive Peatland

B. ☒ Y ☐ N Has the wetland hydrology been altered by ditching, tiles, dams, culverts, well pumping, diversion of surface flow, or changes to runoff within the watershed (circle those that apply)?
Alterations to hydrology due to road construction and surrounding residential development.

C. ☒ Y ☐ N Does the wetland have an inlet, outlet, or both (circle those that apply)?

D. ☒ Y ☐ N Is there any field evidence of wetland hydrology such as buttressed tree trunks, adventitious roots, drift lines, water marks, water stained leaves, soil mottling/gleying, organic soils layer, or oxidized rhizospheres (circle those that apply)? **At Sample Site No. 54, hydrology indicators include drift deposits, sediment deposits, water marks, water-stained leaves, and a positive FAC-Neutral test.**

E. ☒ Y ☐ N Does the wetland have standing water, and if so what is the average depth in inches? Approximately how much of the wetland is inundated? **Likely only standing water in the early growing season.**

F. How is the hydroperiod (seasonal water level pattern) of the wetland classified?

- ☐ Permanently Flooded
- ☒ Seasonally Flooded (water absent at end of growing season)
- ☐ Saturated (surface water seldom present)
- ☐ Artificially Flooded
- ☐ Artificially Drained

G. ☒ Y ☐ N Is the wetland a navigable body of water or is a portion of the wetland below the ordinary high-water mark of a navigable water body? List any surface waters associated with the wetland or in proximity to the wetland (note approximate distance from the wetland and navigability determination). Note if there is a surface water connection to other wetlands.
No part of this wetland is navigable. This wetland does not have a surface water connection to other wetlands.

II. VEGETATION

A. Identify the vegetation communities present and the dominant species.

	floating leaved community dominated by:
	submerged aquatic community dominated by:
X	emergent community dominated by: Phalaris arundinacea
	shrub community dominated by:
X	deciduous broad-leaved tree community dominated by: Populus deltoides
	coniferous tree community dominated by:
	open sphagnum mat or bog
	sedge meadow/wet prairie community dominated by:
	other (explain):

B. Other plant species identified during site visit:

See attached species list

III. SOILS

A. NRCS Soil Map Classification: **Pella silt loam (Ph) – Poorly drained**

B. Field description: **Sample Site No. 54 recorded on September 8, 2011**

☐ Organic (histosol)? If so, is it a muck or a peat?

☒ Mineral soil? **Data form for Sample Site No. 54 indicates that it is very similar to Sample Site No. 53, which is shown in tabular form below.**

- Mottling, gleying, sulfidic materials, iron or manganese concretions, organic streaking (circle those that apply)
- Soil Description:
- Depth of mottling/gleying:
- Depth of A Horizon:
- Munsell Color of matrix and mottles
 - Matrix below the A horizon:
 - Mottles:

Depth (inches)	Matrix Color	Redox Concentrations Color	Redox Concentrations Abundance/Contrast	Texture
0-9	N 2.5/0	7.5YR 4/6	Common/Prominent	Silt loam
9-19	5Y 2.5/1	5B 7/1 7.5YR 4/6	Few/Prominent Common/Prominent	Clay loam
19-21	2.5Y 3/1	7.5YR 4/6	Many/Prominent	Clay
21-27	2.5Y 4/1 N 3/0	7.5YR 5/4 - 5/6	Many/Prominent	Silty clay

V. SURROUNDING LAND USES

A. What is the estimated area of the wetland watershed in acres? **12.6**

B. What are the surrounding land uses?

LAND-USE	ESTIMATED % OF WETLAND WATERSHED
Developed (Industrial/Commercial/Residential)	23
Agricultural/cropland	--
Agricultural/grazing	--
Forested (Upland)	67
Grassed recreation areas/parks	--
Old field	--
Highways, roads, bike trails	7
Other (specify) : Wetland	3

VI. SITE SKETCH

See attached aerial map exhibit

FUNCTIONAL ASSESSMENT

The following assessment requires the evaluator to examine site conditions that provide evidence that a given functional value is present and to assess the significance of the wetland to perform those functions. Positive answers to questions indicate the presence of factors important for the function. The questions are not definitive and are only provided to guide the evaluation. After completing each section, the evaluator should consider the factors observed and use best professional judgement to rate the significance. The ratings should be recorded on page 1 of the assessment.

SPECIAL FEATURES/"RED FLAGS"

1. ☒ **N** Is the wetland in or adjacent to an area of special natural resource interest (NR 103.04, Wis. Adm. Code)? If so, check those that apply:
 - ☐ Cold water community as defined in s. NR 102.04(3)(b), Wis. Adm. Code, including trout streams, their tributaries, and trout lakes
 - ☐ Lakes Michigan and Superior and the Mississippi River
 - ☐ State or federal designated wild and scenic river
 - ☐ Designated state riverway
 - ☐ Designated state scenic urban waterway
 - ☐ Environmentally sensitive area or environmental corridor identified in an area-wide water quality management plan, special area management plan, special wetland inventory study, or an advanced delineation and identification study
 - ☐ Calcareous fen
 - ☐ State park, forest, trail or recreation area
 - ☐ State and federal fish and wildlife refuges and fish and wildlife management areas
 - ☐ State or federal designated wilderness area
 - ☐ Designated or dedicated state natural area
 - ☐ Wild rice water listed in ch. NR 19.09, Wis. Adm. Code
 - ☐ Surface water identified as an outstanding or exceptional resource water in ch. NR 102, Wis. Adm. Code
2. ☒ **N** According to the Natural Heritage Inventory (Bureau of Endangered Resources) or direct observations, are there any rare, endangered, or threatened plant or animal species in, near, or using the wetland or adjacent lands? If so, list the species of concern: **Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, has been identified by the Commission staff south of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff west of this location.**
3. ☒ **N** Is the project located in an area that requires a State Coastal Zone Management Plan consistency determination?

Floral Diversity

1. ☒ **N** Does the wetland support a variety of native plant species (i.e. not a monotypic stand of cattail or giant reed grass and/or not dominated by exotic species such as reed canary grass, brome grass, buckthorn, purple loosestrife, etc.)?
2. ☒ **N** Is the wetland plant community regionally scarce or rare?

Wildlife and Fishery Habitat

1. List any species observed, evidenced (e.g. tracks, scat, nest/burrow, calls), or expected to utilize the wetland: **Raccon, White-tailed deer, and song birds utilize this wetland.**
2. ☒ **N** Does the wetland contain a number of diverse vegetative cover types and a high degree of interspersions of those vegetation types?
3. ☒ **N** Is the estimated ratio of open water to cover between 30 and 70 percent? What is the estimated ratio? **0%**
4. ☒ **N** Does the surrounding upland habitat likely support a variety of animal species?
Class II wildlife habitat
5. ☒ **N** Is the wetland part of or associated with a wildlife corridor or designated environmental corridor?
No environmental corridor mapped here.

6. **Y(N)** Is the surrounding habitat and/or the wetland itself a large tract of undeveloped land important for wildlife that requires large home ranges (e.g. bear, woodland passerines)?
7. **Y(N)** Is the surrounding habitat and/or the wetland itself a relatively large tract of undeveloped land within an urbanized environment that is important for wildlife?
8. **Y(N)** Are there other wetland areas near the subject wetland that may be important to wildlife?
9. **Y(N)** Is the wetland contiguous with a permanent waterbody or periodically inundated for sufficient periods of time to provide spawning/nursery habitat for fish?
10. **Y(N)** Can the wetland provide significant food base for fish and wildlife (e.g. insects, crustaceans, voles, forage fish, amphibians, reptiles, shrews, wild rice, wild celery, duckweed, pondweeds, watermeal, bulrushes, bur reeds, arrowhead, smartweeds, millets...)?
11. **Y(N)** Is the wetland located in a priority watershed/township as identified in the Upper Mississippi and Great Lakes Joint Venture of the North American Waterfowl Management Plan?
12. **Y(N)** Is the wetland providing habitat that is scarce to the region?

Flood and Stormwater Storage/Attenuation

1. **Y(N)** Are there steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within the watershed (circle those that apply)? **Steeply sloped woodland area to SE of this wetland.**
2. **Y(N)** Does the wetland significantly reduce run-off velocity due to its size, configuration, braided flow patterns, or vegetation type and density?
3. **Y(N)** Does the wetland show evidence of flashy water level responses to storm events (debris marks, erosion lines, stormwater inputs, channelized inflow)?
4. **Y(N)** Is there a natural feature or human-made structure impeding drainage from the wetland that causes backwater conditions?
5. **Y(N)** Considering the size of the wetland area in relation to the size of its watershed, at any time during the year is water likely to reach the wetland's storage capacity (i.e. the level of easily observable wetland vegetation)? [For some cases where greater documentation is required, one should determine if the wetland has capacity to hold 25% of the run-off from a 2 year-24 hour storm event.]
6. **Y(N)** Considering the location of the wetland in relation to the associated surface water watershed, is the wetland important for attenuating or storing flood or stormwater peaks (i.e. is the wetland located in the mid or lower reaches of the watershed)?

Water Quality Protection

1. **Y(N)** Does the wetland receive overland flow or direct discharge of stormwater as a primary source of water (circle that which applies)?
2. **Y(N)** Do the surrounding land uses have the potential to deliver significant nutrient and/or sediment loads to the wetland? **Road salt from roadways. Surrounding development contributes fertilizer loads.**
3. **Y(N)** Based on your answers to the flood/stormwater section above, does the wetland perform significant flood/stormwater attenuation (residence time to allow settling)?

4. ☒ ☐ Does the wetland have significant vegetative density to decrease water energy and allow settling of suspended materials?
5. ☒ ☐ Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface water?
6. ☒ ☐ Are algal blooms, heavy macrophyte growth, or other signs of excess nutrient loading to the wetland apparent (or historically reported)?

Shoreline Protection

1. ☒ ☐ Is the wetland in a lake fringe or riverine setting? If NO, STOP and enter "not applicable" for this function. If YES, then answer the applicable questions.
2. ☐ ☐ Is the shoreline exposed to constant wave action caused by long wind fetch or boat traffic?
3. ☐ ☐ Is the shoreline and shallow littoral zone vegetated with submerged or emergent vegetation in the swash zone that decrease wave energy or perennial wetland species that form dense root mats and/or species that have strong stems that are resistant to erosive forces?
4. ☐ ☐ Is the stream bank prone to erosion due to unstable soils, land uses, or ice floes?
5. ☐ ☐ Is the stream bank vegetated with densely rooted shrubs that provide upper bank stability?

Groundwater Recharge and Discharge

1. ☒ ☐ Related to discharge, are there observable (or reported) springs located in the wetland, physical indicators of springs such as marl soil, or vegetation indicators such as watercress or marsh marigold present that tend to indicate the presence of groundwater springs?
2. ☒ ☐ Related to discharge, may the wetland contribute to the maintenance of base flow in a stream?
3. ☒ ☐ Related to recharge, is the wetland located on or near a groundwater divide (e.g. a topographic high)? **This plant community area is identified in SEWRPC Planning Report No. 52, A Regional Water Supply Plan for Southeastern Wisconsin, Volumes 1 and 2, as having a high groundwater recharge potential (See map).**

Aesthetics/Recreation/Education and Science

1. ☒ ☐ Is the wetland visible from any of the following kinds of vantage points: ☒ roads, ☒ public lands, ☒ houses, and/or ☒ businesses? (Circle all that apply.)
2. ☒ ☐ Is the wetland in or near any population centers? **City of Waukesha**
3. ☒ ☐ Is any part of the wetland in public or conservation ownership?
4. ☒ ☐ Does the public have direct access to the wetland from public roads or waterways? (Circle those that apply.)
5. Is the wetland itself relatively free of obvious human influences, such as:
 - a. ☒ ☐ Buildings?
 - b. ☒ ☐ Roads?
 - c. ☒ ☐ Other structures?
 - d. ☒ ☐ Trash?
 - e. ☒ ☐ Pollution?
 - f. ☒ ☐ Filling?
 - g. ☒ ☐ Dredging/drainage?
 - h. ☒ ☐ Domination by non-native vegetation?

6. Is the surrounding viewshed relatively free of obvious human influences, such as:
- ☒ ~~Y~~ ☒ ~~N~~ Buildings?
 - ☒ ~~Y~~ ☒ ~~N~~ Roads?
 - ☒ ~~Y~~ ☒ ~~N~~ Other structures?
7. ☒ ~~Y~~ ☒ ~~N~~ Is the wetland organized into a variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water)?
8. ☒ ~~Y~~ ☒ ~~N~~ Does the wetland add to the variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water) within the landscape as a whole?
9. Does the wetland encourage exploration because any of the following factors are present:
- ☒ ~~Y~~ ☒ ~~N~~ Long views within the wetland?
 - ☒ ~~Y~~ ☒ ~~N~~ Long views in the viewshed adjacent to the wetland?
 - ☒ ~~Y~~ ☒ ~~N~~ Convoluted edges within and/or around the wetland border?
 - ☒ ~~Y~~ ☒ ~~N~~ The wetland provides a different (and perhaps more natural/complex) kind of environment from the surrounding land covers?
10. ☒ ~~Y~~ ☒ ~~N~~ Is the wetland currently being used for (or does it have the potential to be used for) the following recreational activities? (Check all that apply.)

ACTIVITY	CURRENT USE	POTENTIAL USE
Nature study/photography		
Hiking/biking/skiing		
Hunting/fishing/trapping		
Boating/canoeing		
Food harvesting		
Others (list)		

11. ☒ ~~Y~~ ☒ ~~N~~ Is the wetland currently being used, and/or does it have the potential for use for educational or scientific study purposes (circle that which applies)?

Wisconsin Department of Natural Resources

RAPID ASSESSMENT METHODOLOGY FOR EVALUATING WETLAND FUNCTIONAL VALUES

GENERAL INFORMATION

Name of Wetland: Plant Community Area No. 26
Owner(s): Waukesha County – CTH TT Right-of-Way
Location: Waukesha County; SE ¼ Section 31, Township 7N, Range 19E
Project Name: Proposed Waukesha West Bypass
Evaluator(s): Donald M. Reed, PhD., Chief Biologist; Lawrence A. Leitner, PhD., Principal Biologist; Christopher J. Jors, Biologist, Southeastern Wisconsin Regional Planning Commission
Date(s) of Site Visit(s): September 8, 2011; September 28, 1999

Description of seasonality limitations of this inspection due to time of year of the evaluation and/or current hydrologic and climatologic conditions (e.g. after heavy rains, snow or ice cover, during drought year, during spring flood, during bird migration): **Precipitation records in 2011 indicate normal to below normal precipitation (0 to -1 inches) for June, below normal (-1 to -2 inches) for July, and below normal (-2 to -3 inches) for August.**

WETLAND DESCRIPTION

Wisconsin Wetlands Inventory classification: E2K
Wetland Type: shallow open water deep marsh <u>shallow marsh</u> seasonally flooded basin bog floodplain forest <u>alder thicket</u> sedge meadow coniferous swamp fen <u>wet meadow</u> shrub-carr low prairie hardwood swamp
Estimated size of wetland in acres: Study area wetland = 0.2 acres

SUMMARY OF FUNCTIONAL VALUES

Based on the results of the attached functional assessment, rate the significance of each of the functional values for the subject wetland and check the appropriate box. Complete the table as a summary.

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	N/A
Floral Diversity	X				
Wildlife Habitat	X				
Fishery Habitat					X
Flood/Stormwater Attenuation	X				
Water Quality Protection	X				
Shoreline Protection					X
Groundwater	X				
Aesthetics/Recreation/Education	X				

List any Special Features/"Red Flags": **Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, has been identified by the Commission staff south of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff west of this location.**

SITE DESCRIPTION

I. HYDROLOGIC SETTING

A. Describe the geomorphology of the wetland:

- ☒ Depressional (includes slopes, potholes, small lakes, kettles, etc.)
- ☐ Riverine
- ☐ Lake Fringe
- ☐ Extensive Peatland

B. **Y** **N** Has the wetland hydrology been altered by ditching, tiles, dams, culverts, well pumping, diversion of surface flow, or changes to runoff within the watershed (circle those that apply)?
Alterations to hydrology due to road construction and surrounding commercial development including construction of an elevated parking lot over part of the wetland.

C. **Y** **N** Does the wetland have an inlet, outlet, or both (circle those that apply)?

D. **Y** **N** Is there any field evidence of wetland hydrology such as buttressed tree trunks, adventitious roots, drift lines, water marks, water stained leaves, soil mottling/gleying, organic soils layer, or oxidized rhizospheres (circle those that apply)? **At Sample Site No. 56, hydrology indicators include sediment deposits, water-stained leaves, geomorphic position and a positive FAC-Neutral test. During a field inspection of the subject wetland on September 28, 1999, soils were saturated at the surface and a positive FAC-Neutral test was noted for Sample Site Nos. 1 & 2.**

E. **Y** **N** Does the wetland have standing water, and if so what is the average depth in inches? Approximately how much of the wetland is inundated? **Likely only standing water in the early growing season.**

F. How is the hydroperiod (seasonal water level pattern) of the wetland classified?

- ☐ Permanently Flooded
- ☒ Seasonally Flooded (water absent at end of growing season)
- ☐ Saturated (surface water seldom present)
- ☐ Artificially Flooded
- ☐ Artificially Drained

G. **Y** **N** Is the wetland a navigable body of water or is a portion of the wetland below the ordinary high-water mark of a navigable water body? List any surface waters associated with the wetland or in proximity to the wetland (note approximate distance from the wetland and navigability determination). Note if there is a surface water connection to other wetlands.
No part of this wetland is navigable. This wetland does not have a surface water connection to other wetlands.

II. VEGETATION

A. Identify the vegetation communities present and the dominant species.

<input type="checkbox"/>	floating leaved community dominated by:
<input type="checkbox"/>	submerged aquatic community dominated by:
<input checked="" type="checkbox"/>	emergent community dominated by: Phalaris arundinacea & Typha latifolia
<input type="checkbox"/>	shrub community dominated by:
<input type="checkbox"/>	deciduous broad-leaved tree community dominated by:
<input type="checkbox"/>	coniferous tree community dominated by:
<input type="checkbox"/>	open sphagnum mat or bog
<input type="checkbox"/>	sedge meadow/wet prairie community dominated by:
<input type="checkbox"/>	other (explain):

B. Other plant species identified during site visit:

See attached species list

III. SOILS

A. NRCS Soil Map Classification: **Pella silt loam (Ph) – Poorly drained**

B. Field description: **See Sample Site No. 56 recorded on September 8, 2011; See also sample site data from September 28, 1999 (Sample Site Nos. 1 and 2 from that date are wetland samples)**

☐ Organic (histosol)? If so, is it a muck or a peat?

☐ Mineral soil?

- Mottling, gleying, sulfidic materials, iron or manganese concretions, organic streaking (circle those that apply)
- Soil Description:
- Depth of mottling/gleying:
- Depth of A Horizon:
- Munsell Color of matrix and mottles
 - Matrix below the A horizon:
 - Mottles:

V. SURROUNDING LAND USES

A. What is the estimated area of the wetland watershed in acres? **6.9**

B. What are the surrounding land uses?

LAND-USE	ESTIMATED % OF WETLAND WATERSHED
Developed (Industrial/Commercial/Residential)	60
Agricultural/cropland	--
Agricultural/grazing	--
Forested (Upland)	--
Grassed recreation areas/parks	--
Old field – undeveloped lot	23
Highways, roads, bike trails	14
Other (specify) : Wetland	3

VI. SITE SKETCH

See attached aerial map exhibit

FUNCTIONAL ASSESSMENT

The following assessment requires the evaluator to examine site conditions that provide evidence that a given functional value is present and to assess the significance of the wetland to perform those functions. Positive answers to questions indicate the presence of factors important for the function. The questions are not definitive and are only provided to guide the evaluation. After completing each section, the evaluator should consider the factors observed and use best professional judgement to rate the significance. The ratings should be recorded on page 1 of the assessment.

SPECIAL FEATURES/"RED FLAGS"

1. ☒ **N** Is the wetland in or adjacent to an area of special natural resource interest (NR 103.04, Wis. Adm. Code)? If so, check those that apply:
 - ☐ Cold water community as defined in s. NR 102.04(3)(b), Wis. Adm. Code, including trout streams, their tributaries, and trout lakes
 - ☐ Lakes Michigan and Superior and the Mississippi River
 - ☐ State or federal designated wild and scenic river
 - ☐ Designated state riverway
 - ☐ Designated state scenic urban waterway
 - ☐ Environmentally sensitive area or environmental corridor identified in an area-wide water quality management plan, special area management plan, special wetland inventory study, or an advanced delineation and identification study
 - ☐ Calcareous fen
 - ☐ State park, forest, trail or recreation area
 - ☐ State and federal fish and wildlife refuges and fish and wildlife management areas
 - ☐ State or federal designated wilderness area
 - ☐ Designated or dedicated state natural area
 - ☐ Wild rice water listed in ch. NR 19.09, Wis. Adm. Code
 - ☐ Surface water identified as an outstanding or exceptional resource water in ch. NR 102, Wis. Adm. Code
2. ☒ **N** According to the Natural Heritage Inventory (Bureau of Endangered Resources) or direct observations, are there any rare, endangered, or threatened plant or animal species in, near, or using the wetland or adjacent lands? If so, list the species of concern: **Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, has been identified by the Commission staff south of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff west of this location.**
3. ☒ **N** Is the project located in an area that requires a State Coastal Zone Management Plan consistency determination?

Floral Diversity

1. ☒ **N** Does the wetland support a variety of native plant species (i.e. not a monotypic stand of cattail or giant reed grass and/or not dominated by exotic species such as reed canary grass, brome grass, buckthorn, purple loosestrife, etc.)?
2. ☒ **N** Is the wetland plant community regionally scarce or rare?

Wildlife and Fishery Habitat

1. List any species observed, evidenced (e.g. tracks, scat, nest/burrow, calls), or expected to utilize the wetland: **Marsh birds may occasionally utilize this wetland to a limited extent.**
2. ☒ **N** Does the wetland contain a number of diverse vegetative cover types and a high degree of interspersions of those vegetation types?
3. ☒ **N** Is the estimated ratio of open water to cover between 30 and 70 percent? What is the estimated ratio? **0%**
4. ☒ **N** Does the surrounding upland habitat likely support a variety of animal species?
5. ☒ **N** Is the wetland part of or associated with a wildlife corridor or designated environmental corridor?
No environmental corridor mapped here.

6. ☒ ☐ Is the surrounding habitat and/or the wetland itself a large tract of undeveloped land important for wildlife that requires large home ranges (e.g. bear, woodland passerines)?
7. ☒ ☐ Is the surrounding habitat and/or the wetland itself a relatively large tract of undeveloped land within an urbanized environment that is important for wildlife?
8. ☒ ☐ Are there other wetland areas near the subject wetland that may be important to wildlife?
Class II wildlife habitat to east across CTH TT
9. ☒ ☐ Is the wetland contiguous with a permanent waterbody or periodically inundated for sufficient periods of time to provide spawning/nursery habitat for fish?
10. ☒ ☐ Can the wetland provide significant food base for fish and wildlife (e.g. insects, crustaceans, voles, forage fish, amphibians, reptiles, shrews, wild rice, wild celery, duckweed, pondweeds, watermeal, bulrushes, bur reeds, arrowhead, smartweeds, millets...)?
11. ☒ ☐ Is the wetland located in a priority watershed/township as identified in the Upper Mississippi and Great Lakes Joint Venture of the North American Waterfowl Management Plan?
12. ☒ ☐ Is the wetland providing habitat that is scarce to the region?

Flood and Stormwater Storage/Attenuation

1. ☒ ☐ Are there steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within the watershed (circle those that apply)? **Large parking lot elevated over the subject wetland**
2. ☒ ☐ Does the wetland significantly reduce run-off velocity due to its size, configuration, braided flow patterns, or vegetation type and density?
3. ☒ ☐ Does the wetland show evidence of flashy water level responses to storm events (debris marks, erosion lines, stormwater inputs, channelized inflow)?
4. ☒ ☐ Is there a natural feature or human-made structure impeding drainage from the wetland that causes backwater conditions? **CTH TT road bed impedes drainage to east**
5. ☒ ☐ Considering the size of the wetland area in relation to the size of its watershed, at any time during the year is water likely to reach the wetland's storage capacity (i.e. the level of easily observable wetland vegetation)? [For some cases where greater documentation is required, one should determine if the wetland has capacity to hold 25% of the run-off from a 2 year-24 hour storm event.]
6. ☒ ☐ Considering the location of the wetland in relation to the associated surface water watershed, is the wetland important for attenuating or storing flood or stormwater peaks (i.e. is the wetland located in the mid or lower reaches of the watershed)?

Water Quality Protection

1. ☒ ☐ Does the wetland receive overland flow or direct discharge of stormwater as a primary source of water (circle that which applies)?
2. ☒ ☐ Do the surrounding land uses have the potential to deliver significant nutrient and/or sediment loads to the wetland? **Road salt from roadways & parking lots. Surrounding development contributes fertilizer loads.**
3. ☒ ☐ Based on your answers to the flood/stormwater section above, does the wetland perform significant flood/stormwater attenuation (residence time to allow settling)?

4. Y ☒ N Does the wetland have significant vegetative density to decrease water energy and allow settling of suspended materials?
5. Y ☒ N Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface water?
6. Y ☒ N Are algal blooms, heavy macrophyte growth, or other signs of excess nutrient loading to the wetland apparent (or historically reported)?

Shoreline Protection

1. Y ☒ N Is the wetland in a lake fringe or riverine setting? If NO, STOP and enter "not applicable" for this function. If YES, then answer the applicable questions.
2. Y ☐ N Is the shoreline exposed to constant wave action caused by long wind fetch or boat traffic?
3. Y ☐ N Is the shoreline and shallow littoral zone vegetated with submerged or emergent vegetation in the swash zone that decrease wave energy or perennial wetland species that form dense root mats and/or species that have strong stems that are resistant to erosive forces?
4. Y ☐ N Is the stream bank prone to erosion due to unstable soils, land uses, or ice floes?
5. Y ☐ N Is the stream bank vegetated with densely rooted shrubs that provide upper bank stability?

Groundwater Recharge and Discharge

1. Y ☒ N Related to discharge, are there observable (or reported) springs located in the wetland, physical indicators of springs such as marl soil, or vegetation indicators such as watercress or marsh marigold present that tend to indicate the presence of groundwater springs?
2. Y ☒ N Related to discharge, may the wetland contribute to the maintenance of base flow in a stream?
3. Y ☒ N Related to recharge, is the wetland located on or near a groundwater divide (e.g. a topographic high)? **This plant community area is identified in SEWRPC Planning Report No. 52, A Regional Water Supply Plan for Southeastern Wisconsin, Volumes 1 and 2, as having a high groundwater recharge potential (See map).**

Aesthetics/Recreation/Education and Science

1. Y ☒ N Is the wetland visible from any of the following kinds of vantage points: ☒ roads, public lands, houses, and/or ☒ businesses? (Circle all that apply.)
2. Y ☒ N Is the wetland in or near any population centers? **City of Waukesha**
3. Y ☒ N Is any part of the wetland in public or conservation ownership?
4. Y ☒ N Does the public have direct access to the wetland from public roads or waterways? (Circle those that apply.)
5. Is the wetland itself relatively free of obvious human influences, such as:
 - a. Y ☒ N Buildings?
 - b. Y ☒ N Roads?
 - c. Y ☒ N Other structures?
 - d. Y ☒ N Trash?
 - e. Y ☒ N Pollution?
 - f. Y ☒ N Filling?
 - g. Y ☒ N Dredging/drainage?
 - h. Y ☒ N Domination by non-native vegetation?

6. Is the surrounding viewshed relatively free of obvious human influences, such as:
- ☒ ~~Y~~ ☒ ~~N~~ Buildings?
 - ☒ ~~Y~~ ☒ ~~N~~ Roads?
 - ☒ ~~Y~~ ☒ ~~N~~ Other structures?
7. ☒ ~~Y~~ ☒ ~~N~~ Is the wetland organized into a variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water)?
8. ☒ ~~Y~~ ☒ ~~N~~ Does the wetland add to the variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water) within the landscape as a whole?
9. Does the wetland encourage exploration because any of the following factors are present:
- ☒ ~~Y~~ ☒ ~~N~~ Long views within the wetland?
 - ☒ ~~Y~~ ☒ ~~N~~ Long views in the viewshed adjacent to the wetland?
 - ☒ ~~Y~~ ☒ ~~N~~ Convoluted edges within and/or around the wetland border?
 - ☒ ~~Y~~ ☒ ~~N~~ The wetland provides a different (and perhaps more natural/complex) kind of environment from the surrounding land covers?
10. ☒ ~~Y~~ ☒ ~~N~~ Is the wetland currently being used for (or does it have the potential to be used for) the following recreational activities? (Check all that apply.)

ACTIVITY	CURRENT USE	POTENTIAL USE
Nature study/photography		
Hiking/biking/skiing		
Hunting/fishing/trapping		
Boating/canoeing		
Food harvesting		
Others (list)		

11. ☒ ~~Y~~ ☒ ~~N~~ Is the wetland currently being used, and/or does it have the potential for use for educational or scientific study purposes (circle that which applies)?

Wisconsin Department of Natural Resources

RAPID ASSESSMENT METHODOLOGY FOR EVALUATING WETLAND FUNCTIONAL VALUES

GENERAL INFORMATION

Name of Wetland: Plant Community Area No. 27 Owner(s): Waukesha County – CTH TT Right-of-Way Good Times Summer Day Camp – Tax Key No. WAKC0991001
Location: Waukesha County; SW ¼ Section 32, Township 7N, Range 19E
Project Name: Proposed Waukesha West Bypass
Evaluator(s): Donald M. Reed, PhD., Chief Biologist; Lawrence A. Leitner, PhD., Principal Biologist; Christopher J. Jors, Biologist, Southeastern Wisconsin Regional Planning Commission
Date(s) of Site Visit(s): September 8, 2011

Description of seasonality limitations of this inspection due to time of year of the evaluation and/or current hydrologic and climatologic conditions (e.g. after heavy rains, snow or ice cover, during drought year, during spring flood, during bird migration): **Precipitation records in 2011 indicate normal to below normal precipitation (0 to -1 inches) for June, below normal (-1 to -2 inches) for July, and below normal (-2 to -3 inches) for August.**

WETLAND DESCRIPTION

Wisconsin Wetlands Inventory classification: T3/E1K
Wetland Type: shallow open water deep marsh <u>shallow marsh</u> seasonally flooded basin bog floodplain forest alder thicket <u>sedge meadow</u> coniferous swamp fen wet meadow <u>shrub-carr</u> low prairie <u>hardwood swamp</u>
Estimated size of wetland in acres: Study area wetland = 1.0 acre

SUMMARY OF FUNCTIONAL VALUES

Based on the results of the attached functional assessment, rate the significance of each of the functional values for the subject wetland and check the appropriate box. Complete the table as a summary.

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	N/A
Floral Diversity		X			
Wildlife Habitat		X			
Fishery Habitat					X
Flood/Stormwater Attenuation		X			
Water Quality Protection		X			
Shoreline Protection					X
Groundwater	X				
Aesthetics/Recreation/Education		X			

List any Special Features/"Red Flags": **Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, has been identified by the Commission staff south of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff west of this location.**

SITE DESCRIPTION

I. HYDROLOGIC SETTING

A. Describe the geomorphology of the wetland:

- ☒ Depressional (includes slopes, potholes, small lakes, kettles, etc.)
☐ Riverine
☐ Lake Fringe
☐ Extensive Peatland

B. **(Y)N** Has the wetland hydrology been altered by ditching, tiles, dams, culverts, well pumping, diversion of surface flow, or changes to runoff within the watershed (circle those that apply)?
Alterations to hydrology due to road construction

C. **(Y)N** Does the wetland have an inlet, outlet, or both (circle those that apply)?

D. **(Y)N** Is there any field evidence of wetland hydrology such as buttressed tree trunks, adventitious roots, drift lines, water marks, water stained leaves, soil mottling, gleying, organic soils layer, or oxidized rhizospheres (circle those that apply)? **At Sample Site No. 55, hydrology indicators include saturation at the surface, water-stained leaves, oxidized rhizospheres, dry-season water table at 14.5 inches below the surface, geomorphic position, and a positive FAC-Neutral test.**

E. **(Y)N** Does the wetland have standing water, and if so what is the average depth in inches? Approximately how much of the wetland is inundated? **Likely only standing water in the early growing season.**

F. How is the hydroperiod (seasonal water level pattern) of the wetland classified?

- ☐ Permanently Flooded
☒ Seasonally Flooded (water absent at end of growing season)
☐ Saturated (surface water seldom present)
☐ Artificially Flooded
☐ Artificially Drained

G. **(Y)N** Is the wetland a navigable body of water or is a portion of the wetland below the ordinary high-water mark of a navigable water body? List any surface waters associated with the wetland or in proximity to the wetland (note approximate distance from the wetland and navigability determination). Note if there is a surface water connection to other wetlands.
No part of this wetland is navigable. This wetland does not have a surface water connection to other wetlands.

II. VEGETATION

A. Identify the vegetation communities present and the dominant species.

	floating leaved community dominated by:
	submerged aquatic community dominated by:
X	emergent community dominated by: Typha latifolia
X	shrub community dominated by: Salix interior
X	deciduous broad-leaved tree community dominated by: Populus deltoides
	coniferous tree community dominated by:
	open sphagnum mat or bog
	sedge meadow/wet prairie community dominated by:
	other (explain):

B. Other plant species identified during site visit:

See attached species list

III. SOILS

A. NRCS Soil Map Classification: **Pella silt loam (Ph) – Poorly drained**

B. Field description: **Sample Site No. 55 recorded on September 8, 2011.**

☒ Organic (histosol)? If so, is it a muck or a peat?

☒ Mineral soil?

- Mottling, gleying, sulfidic materials, iron or manganese concretions, organic streaking (circle those that apply)
- Soil Description: **See table below**
- Depth of mottling/gleying:
- Depth of A Horizon:
- Munsell Color of matrix and mottles
 - Matrix below the A horizon:
 - Mottles:

Depth (inches)	Matrix Color	Redox Concentrations Color	Redox Concentrations Abundance/Contrast	Texture
0-11	N 2.5/0	7.5YR 4/4	Common/Prominent	Muck
11-17	5Y 4/1	7.5YR 4/4	Many/Prominent	Clay
17	Refusal			Dolomite Bedrock?

V. SURROUNDING LAND USES

A. What is the estimated area of the wetland watershed in acres? **48.7**

B. What are the surrounding land uses?

LAND-USE	ESTIMATED % OF WETLAND WATERSHED
Developed (Industrial/Commercial/Residential)	15
Agricultural/cropland	--
Agricultural/grazing	--
Forested (Upland)	12
Grassed recreation areas/parks	43
Old field	14
Highways, roads, bike trails	3
Other (specify) : Wetland	13

VI. SITE SKETCH

See attached aerial map exhibit

FUNCTIONAL ASSESSMENT

The following assessment requires the evaluator to examine site conditions that provide evidence that a given functional value is present and to assess the significance of the wetland to perform those functions. Positive answers to questions indicate the presence of factors important for the function. The questions are not definitive and are only provided to guide the evaluation. After completing each section, the evaluator should consider the factors observed and use best professional judgement to rate the significance. The ratings should be recorded on page 1 of the assessment.

SPECIAL FEATURES/"RED FLAGS"

1. ☒ **Y** ☐ **N** Is the wetland in or adjacent to an area of special natural resource interest (NR 103.04, Wis. Adm. Code)? If so, check those that apply:
 - ☐ Cold water community as defined in s. NR 102.04(3)(b), Wis. Adm. Code, including trout streams, their tributaries, and trout lakes
 - ☐ Lakes Michigan and Superior and the Mississippi River
 - ☐ State or federal designated wild and scenic river
 - ☐ Designated state riverway
 - ☐ Designated state scenic urban waterway
 - ☒ Environmentally sensitive area or environmental corridor identified in an area-wide water quality management plan, special area management plan, special wetland inventory study, or an advanced delineation and identification study – **Isolated Natural Resource Area**
 - ☐ Calcareous fen
 - ☐ State park, forest, trail or recreation area
 - ☐ State and federal fish and wildlife refuges and fish and wildlife management areas
 - ☐ State or federal designated wilderness area
 - ☐ Designated or dedicated state natural area
 - ☐ Wild rice water listed in ch. NR 19.09, Wis. Adm. Code
 - ☐ Surface water identified as an outstanding or exceptional resource water in ch. NR 102, Wis. Adm. Code
2. ☒ **Y** ☐ **N** According to the Natural Heritage Inventory (Bureau of Endangered Resources) or direct observations, are there any rare, endangered, or threatened plant or animal species in, near, or using the wetland or adjacent lands? If so, list the species of concern: **Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, has been identified by the Commission staff south of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff west of this location.**
3. ☒ **Y** ☐ **N** Is the project located in an area that requires a State Coastal Zone Management Plan consistency determination?

Floral Diversity

1. ☒ **Y** ☐ **N** Does the wetland support a variety of native plant species (i.e. not a monotypic stand of cattail or giant reed grass and/or not dominated by exotic species such as reed canary grass, brome grass, buckthorn, purple loosestrife, etc.)?
2. ☒ **Y** ☐ **N** Is the wetland plant community regionally scarce or rare?

Wildlife and Fishery Habitat

1. List any species observed, evidenced (e.g. tracks, scat, nest/burrow, calls), or expected to utilize the wetland: **Raccoon, White-tailed deer, and song and marsh birds utilize this wetland.**
2. ☒ **Y** ☐ **N** Does the wetland contain a number of diverse vegetative cover types and a high degree of interspersed of those vegetation types?
3. ☒ **Y** ☐ **N** Is the estimated ratio of open water to cover between 30 and 70 percent? What is the estimated ratio? **0%**
4. ☒ **Y** ☐ **N** Does the surrounding upland habitat likely support a variety of animal species? **Somewhat isolated from other habitat areas.**

5. ☒ **Y** ☐ **N** Is the wetland part of or associated with a wildlife corridor or designated environmental corridor?
Class II wildlife habitat and isolated natural resource area mapped here.
6. ☒ **Y** ☐ **N** Is the surrounding habitat and/or the wetland itself a large tract of undeveloped land important for wildlife that requires large home ranges (e.g. bear, woodland passerines)?
7. ☒ **Y** ☐ **N** Is the surrounding habitat and/or the wetland itself a relatively large tract of undeveloped land within an urbanized environment that is important for wildlife?
8. ☒ **Y** ☐ **N** Are there other wetland areas near the subject wetland that may be important to wildlife?
9. ☒ **Y** ☐ **N** Is the wetland contiguous with a permanent waterbody or periodically inundated for sufficient periods of time to provide spawning/nursery habitat for fish?
10. ☒ **Y** ☐ **N** Can the wetland provide significant food base for fish and wildlife (e.g. insects, crustaceans, voles, forage fish, amphibians, reptiles, shrews, wild rice, wild celery, duckweed, pondweeds, watermeal, bulrushes, bur reeds, arrowhead, smartweeds, millets...)?
11. ☒ **Y** ☐ **N** Is the wetland located in a priority watershed/township as identified in the Upper Mississippi and Great Lakes Joint Venture of the North American Waterfowl Management Plan?
12. ☒ **Y** ☐ **N** Is the wetland providing habitat that is scarce to the region?

Flood and Stormwater Storage/Attenuation

1. ☒ **Y** ☐ **N** Are there steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within the watershed (circle those that apply)? **CTH TT and USH 18 border wetland as well as a parking lot/playground along SE edge of wetland.**
2. ☒ **Y** ☐ **N** Does the wetland significantly reduce run-off velocity due to its size, configuration, braided flow patterns, or vegetation type and density?
3. ☒ **Y** ☐ **N** Does the wetland show evidence of flashy water level responses to storm events (debris marks, erosion lines, stormwater inputs, channelized inflow)?
4. ☒ **Y** ☐ **N** Is there a natural feature or human-made structure impeding drainage from the wetland that causes backwater conditions? **CTH TT road bed impedes natural drainage to west**
5. ☒ **Y** ☐ **N** Considering the size of the wetland area in relation to the size of its watershed, at any time during the year is water likely to reach the wetland's storage capacity (i.e. the level of easily observable wetland vegetation)? [For some cases where greater documentation is required, one should determine if the wetland has capacity to hold 25% of the run-off from a 2 year-24 hour storm event.]
6. ☒ **Y** ☐ **N** Considering the location of the wetland in relation to the associated surface water watershed, is the wetland important for attenuating or storing flood or stormwater peaks (i.e. is the wetland located in the mid or lower reaches of the watershed)?

Water Quality Protection

1. ☒ **Y** ☐ **N** Does the wetland receive overland flow or direct discharge of stormwater as a primary source of water (circle that which applies)?
2. ☒ **Y** ☐ **N** Do the surrounding land uses have the potential to deliver significant nutrient and/or sediment loads to the wetland? **Road salt from roadways & parking lots. Surrounding development contributes fertilizer loads.**

3. ☒ Y ☒ N Based on your answers to the flood/stormwater section above, does the wetland perform significant flood/stormwater attenuation (residence time to allow settling)?
4. ☒ Y ☒ N Does the wetland have significant vegetative density to decrease water energy and allow settling of suspended materials?
5. ☒ Y ☒ N Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface water?
6. ☒ Y ☒ N Are algal blooms, heavy macrophyte growth, or other signs of excess nutrient loading to the wetland apparent (or historically reported)?

Shoreline Protection

1. ☒ Y ☒ N Is the wetland in a lake fringe or riverine setting? If NO, STOP and enter "not applicable" for this function. If YES, then answer the applicable questions.
2. ☒ Y ☒ N Is the shoreline exposed to constant wave action caused by long wind fetch or boat traffic?
3. ☒ Y ☒ N Is the shoreline and shallow littoral zone vegetated with submerged or emergent vegetation in the swash zone that decrease wave energy or perennial wetland species that form dense root mats and/or species that have strong stems that are resistant to erosive forces?
4. ☒ Y ☒ N Is the stream bank prone to erosion due to unstable soils, land uses, or ice floes?
5. ☒ Y ☒ N Is the stream bank vegetated with densely rooted shrubs that provide upper bank stability?

Groundwater Recharge and Discharge

1. ☒ Y ☒ N Related to discharge, are there observable (or reported) springs located in the wetland, physical indicators of springs such as marl soil, or vegetation indicators such as watercress or marsh marigold present that tend to indicate the presence of groundwater springs?
2. ☒ Y ☒ N Related to discharge, may the wetland contribute to the maintenance of base flow in a stream?
3. ☒ Y ☒ N Related to recharge, is the wetland located on or near a groundwater divide (e.g. a topographic high)?

Aesthetics/Recreation/Education and Science

1. ☒ Y ☒ N Is the wetland visible from any of the following kinds of vantage points: ☒ roads, public lands, houses, and/or ☒ businesses? (Circle all that apply.) **Also day camp facility.**
2. ☒ Y ☒ N Is the wetland in or near any population centers? **City of Waukesha**
3. ☒ Y ☒ N Is any part of the wetland in public or conservation ownership?
4. ☒ Y ☒ N Does the public have direct access to the wetland from public roads or waterways? (Circle those that apply.) **Also, part of the Good Times Summer Day Camp.**
5. Is the wetland itself relatively free of obvious human influences, such as:

a. <input checked="" type="radio"/> Y <input checked="" type="radio"/> N Buildings?	e. <input checked="" type="radio"/> Y <input checked="" type="radio"/> N Pollution?
b. <input checked="" type="radio"/> Y <input checked="" type="radio"/> N Roads?	f. <input checked="" type="radio"/> Y <input checked="" type="radio"/> N Filling?
c. <input checked="" type="radio"/> Y <input checked="" type="radio"/> N Other structures?	g. <input checked="" type="radio"/> Y <input checked="" type="radio"/> N Dredging/drainage?
d. <input checked="" type="radio"/> Y <input checked="" type="radio"/> N Trash?	h. <input checked="" type="radio"/> Y <input checked="" type="radio"/> N Domination by non-native vegetation?

6. Is the surrounding viewshed relatively free of obvious human influences, such as:
- ☒ **N** Buildings?
 - ☒ **N** Roads?
 - ☒ **N** Other structures?
7. ☒ **Y** ☒ **N** Is the wetland organized into a variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water)?
8. ☒ **Y** ☒ **N** Does the wetland add to the variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water) within the landscape as a whole?
9. Does the wetland encourage exploration because any of the following factors are present:
- ☒ **N** Long views within the wetland?
 - ☒ **N** Long views in the viewshed adjacent to the wetland?
 - ☒ **N** Convoluted edges within and/or around the wetland border?
 - ☒ **N** The wetland provides a different (and perhaps more natural/complex) kind of environment from the surrounding land covers?
10. ☒ **Y** ☒ **N** Is the wetland currently being used for (or does it have the potential to be used for) the following recreational activities? (Check all that apply.) **Currently privately-owned day camp. However, public acquisition would allow for nature study.**

ACTIVITY	CURRENT USE	POTENTIAL USE
Nature study/photography		X
Hiking/biking/skiing		X
Hunting/fishing/trapping		
Boating/canoeing		
Food harvesting		
Others (list)		

11. ☒ **Y** ☒ **N** Is the wetland currently being used, and/or does it have the potential for use for educational or scientific study purposes (circle that which applies)?

Wisconsin Department of Natural Resources

RAPID ASSESSMENT METHODOLOGY FOR EVALUATING WETLAND FUNCTIONAL VALUES

GENERAL INFORMATION

Name of Wetland: Plant Community Area No. 28
Owner(s): Waukesha County – CTH TT Right-of-Way
Location: Waukesha County; SE ¼ Section 31, Township 7N, Range 19E
Project Name: Proposed Waukesha West Bypass
Evaluator(s): Donald M. Reed, PhD., Chief Biologist; Lawrence A. Leitner, PhD., Principal Biologist; Christopher J. Jors, Biologist, Southeastern Wisconsin Regional Planning Commission
Date(s) of Site Visit(s): September 8, 2011

Description of seasonality limitations of this inspection due to time of year of the evaluation and/or current hydrologic and climatologic conditions (e.g. after heavy rains, snow or ice cover, during drought year, during spring flood, during bird migration): **Precipitation records in 2011 indicate normal to below normal precipitation (0 to -1 inches) for June, below normal (-1 to -2 inches) for July, and below normal (-2 to -3 inches) for August.**

WETLAND DESCRIPTION

Wisconsin Wetlands Inventory classification: None
Wetland Type: shallow open water deep marsh <u>shallow marsh</u> seasonally flooded basin bog floodplain forest alder thicket sedge meadow coniferous swamp fen wet meadow shrub-carr low prairie hardwood swamp
Estimated size of wetland in acres: Study area wetland = 0.1 acres

SUMMARY OF FUNCTIONAL VALUES

Based on the results of the attached functional assessment, rate the significance of each of the functional values for the subject wetland and check the appropriate box. Complete the table as a summary.

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	N/A
Floral Diversity	X				
Wildlife Habitat	X				
Fishery Habitat					X
Flood/Stormwater Attenuation	X				
Water Quality Protection	X				
Shoreline Protection					X
Groundwater	X				
Aesthetics/Recreation/Education	X				

List any Special Features/"Red Flags": **Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, has been identified by the Commission staff south of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff west of this location.**

SITE DESCRIPTION

I. HYDROLOGIC SETTING

A. Describe the geomorphology of the wetland:

- ☒ Depressional (includes slopes, potholes, small lakes, kettles, etc.)
☐ Riverine
☐ Lake Fringe
☐ Extensive Peatland

B. ☒ Y ☐ N Has the wetland hydrology been altered by ditching, tiles, dams, culverts, well pumping, diversion of surface flow, or changes to runoff within the watershed (circle those that apply)?
Alterations to hydrology due to road construction and surrounding commercial development.

C. ☒ Y ☐ N Does the wetland have an inlet, outlet, or both (circle those that apply)?

D. ☒ Y ☐ N Is there any field evidence of wetland hydrology such as buttressed tree trunks, adventitious roots, drift lines, water marks, water stained leaves, soil mottling/gleying, organic soils layer, or oxidized rhizospheres (circle those that apply)? **At Sample Site No. 57, hydrology indicators include sediment deposits, algal mat or crust, water-stained leaves, geomorphic position and a positive FAC-Neutral test.**

E. ☒ Y ☐ N Does the wetland have standing water, and if so what is the average depth in inches? Approximately how much of the wetland is inundated? **Likely only standing water in the early growing season.**

F. How is the hydroperiod (seasonal water level pattern) of the wetland classified?

- ☐ Permanently Flooded
☒ Seasonally Flooded (water absent at end of growing season)
☐ Saturated (surface water seldom present)
☐ Artificially Flooded
☐ Artificially Drained

G. ☒ Y ☐ N Is the wetland a navigable body of water or is a portion of the wetland below the ordinary high-water mark of a navigable water body? List any surface waters associated with the wetland or in proximity to the wetland (note approximate distance from the wetland and navigability determination). Note if there is a surface water connection to other wetlands.
No part of this wetland is navigable. This wetland does not have a surface water connection to other wetlands.

II. VEGETATION

A. Identify the vegetation communities present and the dominant species.

	floating leaved community dominated by:
	submerged aquatic community dominated by:
X	emergent community dominated by: Typha angustifolia
	shrub community dominated by:
	deciduous broad-leaved tree community dominated by:
	coniferous tree community dominated by:
	open sphagnum mat or bog
	sedge meadow/wet prairie community dominated by:
	other (explain):

B. Other plant species identified during site visit:

See attached species list

III. SOILS

A. NRCS Soil Map Classification: **Hochheim loam (HmC2) – Well drained. Although, the soils have been altered on this site.**

B. Field description: **See Sample Site No. 57 recorded on September 8, 2011. Profile description not recorded due to refusal at a gravel layer just below surface. 1 inch of muck at soil surface.**

☐ Organic (histosol)? If so, is it a muck or a peat?

☐ Mineral soil?

- Mottling, gleying, sulfidic materials, iron or manganese concretions, organic streaking (circle those that apply)
- Soil Description:
- Depth of mottling/gleying:
- Depth of A Horizon:
- Munsell Color of matrix and mottles
 - Matrix below the A horizon:
 - Mottles:

V. SURROUNDING LAND USES

A. What is the estimated area of the wetland watershed in acres? **1.9**

B. What are the surrounding land uses?

LAND-USE	ESTIMATED % OF WETLAND WATERSHED
Developed (Industrial/Commercial/Residential)	59
Agricultural/cropland	--
Agricultural/grazing	--
Forested (Upland)	--
Grassed recreation areas/parks	--
Old field	--
Highways, roads, bike trails	36
Other (specify) : Wetland	5

VI. SITE SKETCH

See attached aerial map exhibit

FUNCTIONAL ASSESSMENT

The following assessment requires the evaluator to examine site conditions that provide evidence that a given functional value is present and to assess the significance of the wetland to perform those functions. Positive answers to questions indicate the presence of factors important for the function. The questions are not definitive and are only provided to guide the evaluation. After completing each section, the evaluator should consider the factors observed and use best professional judgement to rate the significance. The ratings should be recorded on page 1 of the assessment.

SPECIAL FEATURES/"RED FLAGS"

1. **Y(N)** Is the wetland in or adjacent to an area of special natural resource interest (NR 103.04, Wis. Adm. Code)? If so, check those that apply:
 - ☐ Cold water community as defined in s. NR 102.04(3)(b), Wis. Adm. Code, including trout streams, their tributaries, and trout lakes
 - ☐ Lakes Michigan and Superior and the Mississippi River
 - ☐ State or federal designated wild and scenic river
 - ☐ Designated state riverway
 - ☐ Designated state scenic urban waterway
 - ☐ Environmentally sensitive area or environmental corridor identified in an area-wide water quality management plan, special area management plan, special wetland inventory study, or an advanced delineation and identification study
 - ☐ Calcareous fen
 - ☐ State park, forest, trail or recreation area
 - ☐ State and federal fish and wildlife refuges and fish and wildlife management areas
 - ☐ State or federal designated wilderness area
 - ☐ Designated or dedicated state natural area
 - ☐ Wild rice water listed in ch. NR 19.09, Wis. Adm. Code
 - ☐ Surface water identified as an outstanding or exceptional resource water in ch. NR 102, Wis. Adm. Code
2. **Y(N)** According to the Natural Heritage Inventory (Bureau of Endangered Resources) or direct observations, are there any rare, endangered, or threatened plant or animal species in, near, or using the wetland or adjacent lands? If so, list the species of concern: **Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, has been identified by the Commission staff south of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff west of this location.**
3. **Y(N)** Is the project located in an area that requires a State Coastal Zone Management Plan consistency determination?

Floral Diversity

1. **Y(N)** Does the wetland support a variety of native plant species (i.e. not a monotypic stand of cattail or giant reed grass and/or not dominated by exotic species such as reed canary grass, brome grass, buckthorn, purple loosestrife, etc.)?
2. **Y(N)** Is the wetland plant community regionally scarce or rare?

Wildlife and Fishery Habitat

1. List any species observed, evidenced (e.g. tracks, scat, nest/burrow, calls), or expected to utilize the wetland: **Due to size, it's unlikely that any significant utilization by wildlife occurs in this wetland.**
2. **Y(N)** Does the wetland contain a number of diverse vegetative cover types and a high degree of interspersions of those vegetation types?
3. **Y(N)** Is the estimated ratio of open water to cover between 30 and 70 percent? What is the estimated ratio? **0%**
4. **Y(N)** Does the surrounding upland habitat likely support a variety of animal species?
5. **Y(N)** Is the wetland part of or associated with a wildlife corridor or designated environmental corridor?
No wildlife habitat or environmental corridor mapped here.

6. ☒ ☐ Is the surrounding habitat and/or the wetland itself a large tract of undeveloped land important for wildlife that requires large home ranges (e.g. bear, woodland passerines)?
7. ☒ ☐ Is the surrounding habitat and/or the wetland itself a relatively large tract of undeveloped land within an urbanized environment that is important for wildlife?
8. ☒ ☐ Are there other wetland areas near the subject wetland that may be important to wildlife?
9. ☒ ☐ Is the wetland contiguous with a permanent waterbody or periodically inundated for sufficient periods of time to provide spawning/nursery habitat for fish?
10. ☒ ☐ Can the wetland provide significant food base for fish and wildlife (e.g. insects, crustaceans, voles, forage fish, amphibians, reptiles, shrews, wild rice, wild celery, duckweed, pondweeds, watermeal, bulrushes, bur reeds, arrowhead, smartweeds, millets...)?
11. ☒ ☐ Is the wetland located in a priority watershed/township as identified in the Upper Mississippi and Great Lakes Joint Venture of the North American Waterfowl Management Plan?
12. ☒ ☐ Is the wetland providing habitat that is scarce to the region?

Flood and Stormwater Storage/Attenuation

1. ☒ ☐ Are there steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within the watershed (circle those that apply)? **Roadways, driveways, parking lots, and buildings.**
2. ☒ ☐ Does the wetland significantly reduce run-off velocity due to its size, configuration, braided flow patterns, or vegetation type and density?
3. ☒ ☐ Does the wetland show evidence of flashy water level responses to storm events (debris marks, erosion lines, stormwater inputs, channelized inflow)?
4. ☒ ☐ Is there a natural feature or human-made structure impeding drainage from the wetland that causes backwater conditions?
5. ☒ ☐ Considering the size of the wetland area in relation to the size of its watershed, at any time during the year is water likely to reach the wetland's storage capacity (i.e. the level of easily observable wetland vegetation)? [For some cases where greater documentation is required, one should determine if the wetland has capacity to hold 25% of the run-off from a 2 year-24 hour storm event.]
6. ☒ ☐ Considering the location of the wetland in relation to the associated surface water watershed, is the wetland important for attenuating or storing flood or stormwater peaks (i.e. is the wetland located in the mid or lower reaches of the watershed)?

Water Quality Protection

1. ☒ ☐ Does the wetland receive overland flow or direct discharge of stormwater as a primary source of water (circle that which applies)?
2. ☒ ☐ Do the surrounding land uses have the potential to deliver significant nutrient and/or sediment loads to the wetland? **Road salt from roadways & parking lots. Surrounding development contributes fertilizer loads.**
3. ☒ ☐ Based on your answers to the flood/stormwater section above, does the wetland perform significant flood/stormwater attenuation (residence time to allow settling)?

4. ☒ **N** Does the wetland have significant vegetative density to decrease water energy and allow settling of suspended materials?
5. ☒ **N** Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface water?
6. ☒ **N** Are algal blooms, heavy macrophyte growth, or other signs of excess nutrient loading to the wetland apparent (or historically reported)?

Shoreline Protection

1. ☒ **N** Is the wetland in a lake fringe or riverine setting? If NO, STOP and enter "not applicable" for this function. If YES, then answer the applicable questions.
2. **Y N** Is the shoreline exposed to constant wave action caused by long wind fetch or boat traffic?
3. **Y N** Is the shoreline and shallow littoral zone vegetated with submerged or emergent vegetation in the swash zone that decrease wave energy or perennial wetland species that form dense root mats and/or species that have strong stems that are resistant to erosive forces?
4. **Y N** Is the stream bank prone to erosion due to unstable soils, land uses, or ice floes?
5. **Y N** Is the stream bank vegetated with densely rooted shrubs that provide upper bank stability?

Groundwater Recharge and Discharge

1. ☒ **N** Related to discharge, are there observable (or reported) springs located in the wetland, physical indicators of springs such as marl soil, or vegetation indicators such as watercress or marsh marigold present that tend to indicate the presence of groundwater springs?
2. ☒ **N** Related to discharge, may the wetland contribute to the maintenance of base flow in a stream?
3. ☒ **N** Related to recharge, is the wetland located on or near a groundwater divide (e.g. a topographic high)? **This plant community area is identified in SEWRPC Planning Report No. 52, A Regional Water Supply Plan for Southeastern Wisconsin, Volumes 1 and 2, as having a high groundwater recharge potential (See map).**

Aesthetics/Recreation/Education and Science

1. ☒ **Y** ☒ **N** Is the wetland visible from any of the following kinds of vantage points: roads, public lands, houses, and/or businesses? (Circle all that apply.)
2. ☒ **Y** ☒ **N** Is the wetland in or near any population centers? **City of Waukesha**
3. ☒ **N** Is any part of the wetland in public or conservation ownership?
4. ☒ **Y** ☒ **N** Does the public have direct access to the wetland from public roads or waterways? (Circle those that apply.) **Entirely within the CTH TT right-of-way.**
5. Is the wetland itself relatively free of obvious human influences, such as:

a. <input checked="" type="radio"/> Y <input checked="" type="radio"/> N Buildings?	e. <input checked="" type="radio"/> Y <input checked="" type="radio"/> N Pollution?
b. <input checked="" type="radio"/> Y <input checked="" type="radio"/> N Roads?	f. <input checked="" type="radio"/> Y <input checked="" type="radio"/> N Filling?
c. <input checked="" type="radio"/> Y <input checked="" type="radio"/> N Other structures?	g. <input checked="" type="radio"/> Y <input checked="" type="radio"/> N Dredging/drainage?
d. <input checked="" type="radio"/> Y <input checked="" type="radio"/> N Trash?	h. <input checked="" type="radio"/> Y <input checked="" type="radio"/> N Domination by non-native vegetation?

6. Is the surrounding viewshed relatively free of obvious human influences, such as:
- ☒ ~~Y~~ ☒ ~~N~~ Buildings?
 - ☒ ~~Y~~ ☒ ~~N~~ Roads?
 - ☒ ~~Y~~ ☒ ~~N~~ Other structures?
7. ☒ ~~Y~~ ☒ ~~N~~ Is the wetland organized into a variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water)?
8. ☒ ~~Y~~ ☒ ~~N~~ Does the wetland add to the variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water) within the landscape as a whole?
9. Does the wetland encourage exploration because any of the following factors are present:
- ☒ ~~Y~~ ☒ ~~N~~ Long views within the wetland?
 - ☒ ~~Y~~ ☒ ~~N~~ Long views in the viewshed adjacent to the wetland?
 - ☒ ~~Y~~ ☒ ~~N~~ Convoluted edges within and/or around the wetland border?
 - ☒ ~~Y~~ ☒ ~~N~~ The wetland provides a different (and perhaps more natural/complex) kind of environment from the surrounding land covers?
10. ☒ ~~Y~~ ☒ ~~N~~ Is the wetland currently being used for (or does it have the potential to be used for) the following recreational activities? (Check all that apply.)

ACTIVITY	CURRENT USE	POTENTIAL USE
Nature study/photography		
Hiking/biking/skiing		
Hunting/fishing/trapping		
Boating/canoeing		
Food harvesting		
Others (list)		

11. ☒ ~~Y~~ ☒ ~~N~~ Is the wetland currently being used, and/or does it have the potential for use for educational or scientific study purposes (circle that which applies)?

Wisconsin Department of Natural Resources

RAPID ASSESSMENT METHODOLOGY FOR EVALUATING WETLAND FUNCTIONAL VALUES

GENERAL INFORMATION

Name of Wetland: Plant Community Area Nos. 29
Owner(s): Waukesha County – CTH TT Right-of-Way
Location: Waukesha County; SE ¼ Section 31, Township 7N, Range 19E
Project Name: Proposed Waukesha West Bypass
Evaluator(s): Donald M. Reed, PhD., Chief Biologist; Lawrence A. Leitner, PhD., Principal Biologist; Christopher J. Jors, Biologist, Southeastern Wisconsin Regional Planning Commission
Date(s) of Site Visit(s): September 8, 2011

Description of seasonality limitations of this inspection due to time of year of the evaluation and/or current hydrologic and climatologic conditions (e.g. after heavy rains, snow or ice cover, during drought year, during spring flood, during bird migration): **Precipitation records in 2011 indicate normal to below normal precipitation (0 to -1 inches) for June, below normal (-1 to -2 inches) for July, below normal (-2 to -3 inches) for August, above normal (+1 to +2 inches) for September.**

WETLAND DESCRIPTION

Wisconsin Wetlands Inventory classification: T3K
Wetland Type: shallow open water deep marsh shallow marsh seasonally flooded basin bog floodplain forest alder thicket sedge meadow coniferous swamp fen atypical (farmed) wetland wet meadow shrub-carr low prairie <u>hardwood swamp</u>
Estimated size of wetland in acres: Study area wetland = 0.1 acre

SUMMARY OF FUNCTIONAL VALUES

Based on the results of the attached functional assessment, rate the significance of each of the functional values for the subject wetland and check the appropriate box. Complete the table as a summary.

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	N/A
Floral Diversity		X			
Wildlife Habitat		X			
Fishery Habitat	X				
Flood/Stormwater Attenuation	X				
Water Quality Protection	X				
Shoreline Protection	X				
Groundwater		X			
Aesthetics/Recreation/Education	X				

List any Special Features/"Red Flags": **Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, has been identified by the Commission staff southeast of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff west of this location. See page 5 for details.**

SITE DESCRIPTION

I. HYDROLOGIC SETTING

A. Describe the geomorphology of the wetland:

- ☐ Depressional (includes slopes, potholes, small lakes, kettles, etc.)
- ☒ Riverine
- ☐ Lake Fringe
- ☐ Extensive Peatland

B. **(Y)N** Has the wetland hydrology been altered by ditching, tiles, dams, culverts, well pumping, diversion of surface flow, or changes to runoff within the watershed (circle those that apply)?
Alterations to hydrology due to road construction & surrounding commercial development

C. **(Y)N** Does the wetland have an inlet, outlet, or both (circle those that apply)? **Pebble Creek passes through this wetland.**

D. **(Y)N** Is there any field evidence of wetland hydrology such as buttressed tree trunks, adventitious roots, drift lines, water marks, water stained leaves, soil mottling, gleying, organic soils layer, or oxidized rhizospheres (circle those that apply)? **At Sample Site No. 59, hydrology indicators include water-stained leaves, geomorphic position, and a positive FAC-Neutral test.**

E. **(Y)N** Does the wetland have standing water, and if so what is the average depth in inches? Approximately how much of the wetland is inundated? **Other than stream channel itself, no standing water observed late in growing season.**

F. How is the hydroperiod (seasonal water level pattern) of the wetland classified?

- ☐ Permanently Flooded
- ☒ Seasonally Flooded (water absent at end of growing season)
- ☐ Saturated (surface water seldom present)
- ☐ Artificially Flooded
- ☐ Artificially Drained

G. **(Y)N** Is the wetland a navigable body of water or is a portion of the wetland below the ordinary high-water mark of a navigable water body? List any surface waters associated with the wetland or in proximity to the wetland (note approximate distance from the wetland and navigability determination). Note if there is a surface water connection to other wetlands.
This segment of Pebble Creek which runs through the subject wetland is likely navigable. There is a surface water connection to other wetlands.

II. VEGETATION

A. Identify the vegetation communities present and the dominant species.

	floating leaved community dominated by:
	submerged aquatic community dominated by:
	emergent community dominated by:
	shrub community dominated by:
X	deciduous broad-leaved tree community dominated by: Acer negundo
	coniferous tree community dominated by:
	open sphagnum mat or bog
	sedge meadow/wet prairie community dominated by:
	other (explain):

B. Other plant species identified during site visit:

See attached species list

III. SOILS

A. NRCS Soil Map Classification: **Pella silt loam (Pm) - Poorly drained**

B. Field description: **Sample site no. 59 recorded for this plant community area on 9/8/2011.**

☐ Organic (histosol)? If so, is it a muck or a peat?

☒ Mineral soil?

- Mottling, gleying, sulfidic materials, iron or manganese concretions, organic streaking (circle those that apply)
- Soil Description: **See below**
- Depth of mottling/gleying:
- Depth of A Horizon:
- Munsell Color of matrix and mottles
 - Matrix below the A horizon:
 - Mottles:

Depth (inches)	Matrix Color	Redox Concentrations Color	Redox Concentrations Abundance/Contrast	Texture
0-13	2.5Y 2.5/1			Clay
13-24	7.5Y 2.5/1	10YR 5/6	Common/Prominent	Clay
24-30	10YR 4/1	10YR 5/6	Many/Prominent	Clay

V. SURROUNDING LAND USES

A. What is the estimated area of the wetland watershed in acres? **247**

B. What are the surrounding land uses?

LAND-USE	ESTIMATED % OF WETLAND WATERSHED
Developed (Industrial/Commercial/Residential)	28
Agricultural/cropland	15
Agricultural/grazing	--
Forested (Upland)	22
Grassed recreation areas/parks	1
Old field	9
Highways, roads, bike trails	12
Other (specify) : Wetland	13

VI. SITE SKETCH

See attached aerial map exhibit

FUNCTIONAL ASSESSMENT

The following assessment requires the evaluator to examine site conditions that provide evidence that a given functional value is present and to assess the significance of the wetland to perform those functions. Positive answers to questions indicate the presence of factors important for the function. The questions are not definitive and are only provided to guide the evaluation. After completing each section, the evaluator should consider the factors observed and use best professional judgement to rate the significance. The ratings should be recorded on page 1 of the assessment.

SPECIAL FEATURES/"RED FLAGS"

1. ☒ **Y** ☐ **N** Is the wetland in or adjacent to an area of special natural resource interest (NR 103.04, Wis. Adm. Code)? If so, check those that apply:
 - ☒ Cold water community as defined in s. NR 102.04(3)(b), Wis. Adm. Code, including trout streams, their tributaries, and trout lakes
 - ☐ Lakes Michigan and Superior and the Mississippi River
 - ☐ State or federal designated wild and scenic river
 - ☐ Designated state riverway
 - ☐ Designated state scenic urban waterway
 - ☒ Environmentally sensitive area or environmental corridor identified in an area-wide water quality management plan, special area management plan, special wetland inventory study, or an advanced delineation and identification study – **Secondary Environmental Corridor**
 - ☐ Calcareous fen
 - ☐ State park, forest, trail or recreation area
 - ☐ State and federal fish and wildlife refuges and fish and wildlife management areas
 - ☐ State or federal designated wilderness area
 - ☐ Designated or dedicated state natural area
 - ☐ Wild rice water listed in ch. NR 19.09, Wis. Adm. Code
 - ☐ Surface water identified as an outstanding or exceptional resource water in ch. NR 102, Wis. Adm. Code
2. ☒ **Y** ☐ **N** According to the Natural Heritage Inventory (Bureau of Endangered Resources) or direct observations, are there any rare, endangered, or threatened plant or animal species in, near, or using the wetland or adjacent lands? If so, list the species of concern: **Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, has been identified by the Commission staff southeast of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff west of this location.**
3. ☐ **Y** ☒ **N** Is the project located in an area that requires a State Coastal Zone Management Plan consistency determination?

Floral Diversity

1. ☒ **Y** ☐ **N** Does the wetland support a variety of native plant species (i.e. not a monotypic stand of cattail or giant reed grass and/or not dominated by exotic species such as reed canary grass, brome grass, buckthorn, purple loosestrife, etc.)?
2. ☐ **Y** ☒ **N** Is the wetland plant community regionally scarce or rare?

Wildlife and Fishery Habitat

1. List any species observed, evidenced (e.g. tracks, scat, nest/burrow, calls), or expected to utilize the wetland: **This reach was identified by Commission staff to contain a total of four fish species classified as very tolerant of pollution. Macroinvertebrate abundance and diversity are indicative of very poor to fair water quality conditions. Raccoon, White-tailed deer, Song birds, and waterfowl utilize this plant community area.**
2. ☐ **Y** ☒ **N** Does the wetland contain a number of diverse vegetative cover types and a high degree of interspersed of those vegetation types?
3. ☐ **Y** ☒ **N** Is the estimated ratio of open water to cover between 30 and 70 percent? What is the estimated ratio? **5% - Open water in creek bed**
4. ☐ **Y** ☒ **N** Does the surrounding upland habitat likely support a variety of animal species?
Surrounded by active agricultural lands and commercial & residential development

5. ☒ **N** Is the wetland part of or associated with a wildlife corridor or designated environmental corridor?
Secondary environmental corridor.
6. ☒ **N** Is the surrounding habitat and/or the wetland itself a large tract of undeveloped land important for wildlife that requires large home ranges (e.g. bear, woodland passerines)?
7. ☒ **N** Is the surrounding habitat and/or the wetland itself a relatively large tract of undeveloped land within an urbanized environment that is important for wildlife? **The wetland itself is important as a wildlife corridor along the Pebble Creek corridor.**
8. ☒ **N** Are there other wetland areas near the subject wetland that may be important to wildlife?
Important wetlands for wildlife upstream and downstream on Pebble Creek.
9. ☒ **N** Is the wetland contiguous with a permanent waterbody or periodically inundated for sufficient periods of time to provide spawning/nursery habitat for fish? **A portion of this area is within the modeled 2-year recurrence interval floodplain boundary. Therefore, it may provide spawning habitat.**
10. ☒ **N** Can the wetland provide significant food base for fish and wildlife (e.g. insects, crustaceans, voles, forage fish, amphibians, reptiles, shrews, wild rice, wild celery, duckweed, pondweeds, watermeal, bulrushes, bur reeds, arrowhead, smartweeds, millets...)?
11. ☒ **N** Is the wetland located in a priority watershed/township as identified in the Upper Mississippi and Great Lakes Joint Venture of the North American Waterfowl Management Plan?
12. ☒ **N** Is the wetland providing habitat that is scarce to the region?

Flood and Stormwater Storage/Attenuation

1. ☒ **N** Are there steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within the watershed (circle those that apply)?
2. ☒ **N** Does the wetland significantly reduce run-off velocity due to its size, configuration, braided flow patterns, or vegetation type and density? **Stream channel straightened – water moves quickly.**
3. ☒ **N** Does the wetland show evidence of flashy water level responses to storm events (debris marks, erosion lines, stormwater inputs, channelized inflow)? **Drift lines observed along stream channel**
4. ☒ **N** Is there a natural feature or human-made structure impeding drainage from the wetland that causes backwater conditions? **Culvert carrying flows under USH 18 may reach capacity during high flows.**
5. ☒ **N** Considering the size of the wetland area in relation to the size of its watershed, at any time during the year is water likely to reach the wetland's storage capacity (i.e. the level of easily observable wetland vegetation)? [For some cases where greater documentation is required, one should determine if the wetland has capacity to hold 25% of the run-off from a 2 year-24 hour storm event.]
6. ☒ **N** Considering the location of the wetland in relation to the associated surface water watershed, is the wetland important for attenuating or storing flood or stormwater peaks (i.e. is the wetland located in the mid or lower reaches of the watershed)? **While a portion of this wetland area is within the modeled 100-year recurrence interval floodplain and floodway, past creek channel modifications including straightening have reduced attenuation and storing functions.**

Water Quality Protection

1. ☒ **N** Does the wetland receive overland flow or direct discharge of stormwater as a primary source of water (circle that which applies)?

2. ☒ Y ☐ N Do the surrounding land uses have the potential to deliver significant nutrient and/or sediment loads to the wetland? **Residential development contributes nutrient loads when lawn fertilizers are applied. Agricultural lands contribute nutrients from fertilizers and sediments. In addition, road salt runoff occurs from the many impervious surfaces which drain to this wetland.**
3. ☒ Y ☐ N Based on your answers to the flood/stormwater section above, does the wetland perform significant flood/stormwater attenuation (residence time to allow settling)?
4. ☒ Y ☐ N Does the wetland have significant vegetative density to decrease water energy and allow settling of suspended materials?
5. ☒ Y ☐ N Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface water?
6. ☒ Y ☐ N Are algal blooms, heavy macrophyte growth, or other signs of excess nutrient loading to the wetland apparent (or historically reported)?

Shoreline Protection

1. ☒ Y ☐ N Is the wetland in a lake fringe or riverine setting? If NO, STOP and enter "not applicable" for this function. If YES, then answer the applicable questions.
2. ☒ Y ☐ N Is the shoreline exposed to constant wave action caused by long wind fetch or boat traffic?
3. ☒ Y ☐ N Is the shoreline and shallow littoral zone vegetated with submerged or emergent vegetation in the swash zone that decrease wave energy or perennial wetland species that form dense root mats and/or species that have strong stems that are resistant to erosive forces?
4. ☒ Y ☐ N Is the stream bank prone to erosion due to unstable soils, land uses, or ice floes?
5. ☒ Y ☐ N Is the stream bank vegetated with densely rooted shrubs that provide upper bank stability?

Groundwater Recharge and Discharge

1. ☒ Y ☐ N Related to discharge, are there observable (or reported) springs located in the wetland, physical indicators of springs such as marl soil, or vegetation indicators such as watercress or marsh marigold present that tend to indicate the presence of groundwater springs?
2. ☒ Y ☐ N Related to discharge, may the wetland contribute to the maintenance of base flow in a stream?
3. ☒ Y ☐ N Related to recharge, is the wetland located on or near a groundwater divide (e.g. a topographic high)? **The majority of this wetland and lands adjacent to this wetland are identified in SEWRPC Planning Report No. 52, *A Regional Water Supply Plan for Southeastern Wisconsin, Volumes 1 and 2*, as having a high groundwater recharge potential (See map).**

Aesthetics/Recreation/Education and Science

1. ☒ Y ☐ N Is the wetland visible from any of the following kinds of vantage points: roads, public lands, houses, and/or businesses? (Circle all that apply.)
2. ☒ Y ☐ N Is the wetland in or near any population centers? **City of Waukesha**
3. ☒ Y ☐ N Is any part of the wetland in public or conservation ownership?
4. ☒ Y ☐ N Does the public have direct access to the wetland from public roads or waterways? (Circle those that apply.) **Access from USH 18.**

5. Is the wetland itself relatively free of obvious human influences, such as:

- a. ☒ Y ☒ N Buildings? e. ☒ Y ☒ N Pollution?
b. ☒ Y ☒ N Roads? f. ☒ Y ☒ N Filling?
c. ☒ Y ☒ N Other structures? g. ☒ Y ☒ N Dredging/drainage?
d. ☒ Y ☒ N Trash? h. ☒ Y ☒ N Domination by non-native vegetation?

6. Is the surrounding viewshed relatively free of obvious human influences, such as:

- a. ☒ Y ☒ N Buildings?
b. ☒ Y ☒ N Roads?
c. ☒ Y ☒ N Other structures?

7. ☒ Y ☒ N Is the wetland organized into a variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water)?

8. ☒ Y ☒ N Does the wetland add to the variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water) within the landscape as a whole?

9. Does the wetland encourage exploration because any of the following factors are present:

- a. ☒ Y ☒ N Long views within the wetland?
b. ☒ Y ☒ N Long views in the viewshed adjacent to the wetland?
c. ☒ Y ☒ N Convoluted edges within and/or around the wetland border?
d. ☒ Y ☒ N The wetland provides a different (and perhaps more natural/complex) kind of environment from the surrounding land covers?

10. ☒ Y ☒ N Is the wetland currently being used for (or does it have the potential to be used for) the following recreational activities? (Check all that apply.) **Potential use if acquired**

ACTIVITY	CURRENT USE	POTENTIAL USE
Nature study/photography		X
Hiking/biking/skiing		X
Hunting/fishing/trapping		X
Boating/canoeing		
Food harvesting		
Others (list)		

11. ☒ Y ☒ N Is the wetland currently being used, and/or does it have the potential for use for educational or scientific study purposes (circle that which applies)?

Wisconsin Department of Natural Resources

RAPID ASSESSMENT METHODOLOGY FOR EVALUATING WETLAND FUNCTIONAL VALUES

GENERAL INFORMATION

Name of Wetland: Plant Community Area No. 30
Owner(s): Waukesha Memorial Hospital, Inc. – Tax Key No. WAKC0985300
Location: Waukesha County; NE ¼ Section 31, Township 7N, Range 19E
Project Name: Proposed Waukesha West Bypass
Evaluator(s): Donald M. Reed, PhD., Chief Biologist; Lawrence A. Leitner, PhD., Principal Biologist; Christopher J. Jors, Biologist, Southeastern Wisconsin Regional Planning Commission
Date(s) of Site Visit(s): September 8, 2011

Description of seasonality limitations of this inspection due to time of year of the evaluation and/or current hydrologic and climatologic conditions (e.g. after heavy rains, snow or ice cover, during drought year, during spring flood, during bird migration): **Precipitation records in 2011 indicate normal to below normal precipitation (0 to -1 inches) for June, below normal (-1 to -2 inches) for July, and below normal (-2 to -3 inches) for August.**

WETLAND DESCRIPTION

Wisconsin Wetlands Inventory classification: T3K
Wetland Type: <u>shallow open water</u> deep marsh <u>shallow marsh</u> seasonally flooded basin bog floodplain forest <u>alder thicket</u> sedge meadow coniferous swamp fen <u>wet meadow</u> shrub-carr low prairie hardwood swamp
Estimated size of wetland in acres: Study area wetland = 0.1 acres

SUMMARY OF FUNCTIONAL VALUES

Based on the results of the attached functional assessment, rate the significance of each of the functional values for the subject wetland and check the appropriate box. Complete the table as a summary.

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	N/A
Floral Diversity	X				
Wildlife Habitat	X				
Fishery Habitat					X
Flood/Stormwater Attenuation		X			
Water Quality Protection		X			
Shoreline Protection					X
Groundwater	X				
Aesthetics/Recreation/Education	X				

List any Special Features/"Red Flags": **Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, has been identified by the Commission staff south of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff southwest of this location.**

SITE DESCRIPTION

I. HYDROLOGIC SETTING

A. Describe the geomorphology of the wetland:

- ☒ Depressional (includes slopes, potholes, small lakes, kettles, etc.)
- ☐ Riverine
- ☐ Lake Fringe
- ☐ Extensive Peatland

B. ☒ **Y** ☒ **N** Has the wetland hydrology been altered by ditching, tiles, dams, culverts, well pumping, diversion of surface flow, or changes to runoff within the watershed (circle those that apply)?

Alterations to hydrology due to detention pond construction & surrounding commercial development.

C. ☒ **Y** ☒ **N** Does the wetland have an inlet, outlet, or both (circle those that apply)? **Stormwater input(s) from development to northwest.**

D. ☒ **Y** ☒ **N** Is there any field evidence of wetland hydrology such as buttressed tree trunks, adventitious roots, drift lines, water marks, water stained leaves, soil mottling/gleying, organic soils layer, or oxidized rhizospheres (circle those that apply)? **At Sample Site No. 60, hydrology indicators include surface water at 7 inches deep, inundation visible on aerial imagery, geomorphic position, and a positive FAC-Neutral test.**

E. ☒ **Y** ☒ **N** Does the wetland have standing water, and if so what is the average depth in inches? Approximately how much of the wetland is inundated? **Standing water measured at 7 inches deep on September 8, 2011. Water would be deeper in early growing season. About 98 percent of the wetland is inundated.**

F. How is the hydroperiod (seasonal water level pattern) of the wetland classified?

- ☐ Permanently Flooded
- ☐ Seasonally Flooded (water absent at end of growing season)
- ☐ Saturated (surface water seldom present)
- ☒ Artificially Flooded
- ☐ Artificially Drained

G. ☒ **Y** ☒ **N** Is the wetland a navigable body of water or is a portion of the wetland below the ordinary high-water mark of a navigable water body? List any surface waters associated with the wetland or in proximity to the wetland (note approximate distance from the wetland and navigability determination). Note if there is a surface water connection to other wetlands.
No part of this artificial pond is considered to be navigable. This wetland does not have a surface water connection to other wetlands or surface waters.

II. VEGETATION

A. Identify the vegetation communities present and the dominant species.

<input type="checkbox"/>	floating leaved community dominated by:
<input type="checkbox"/>	submerged aquatic community dominated by:
<input checked="" type="checkbox"/>	emergent community dominated by: Phragmites australis and Scirpus validus
<input type="checkbox"/>	shrub community dominated by:
<input type="checkbox"/>	deciduous broad-leaved tree community dominated by:
<input type="checkbox"/>	coniferous tree community dominated by:
<input type="checkbox"/>	open sphagnum mat or bog
<input type="checkbox"/>	sedge meadow/wet prairie community dominated by:
<input type="checkbox"/>	other (explain):

B. Other plant species identified during site visit:

See attached species list

III. SOILS

A. NRCS Soil Map Classification: **Hochheim loam (HmB2) – Well drained**

B. Field description: **Sample Site No. 60 recorded on September 8, 2011. Profile description not recorded – hydric by definition due to inundation (NRCS Criteria No. 3).**

☐ Organic (histosol)? If so, is it a muck or a peat?

☐ Mineral soil?

- Mottling, gleying, sulfidic materials, iron or manganese concretions, organic streaking (circle those that apply)
- Soil Description:
- Depth of mottling/gleying:
- Depth of A Horizon:
- Munsell Color of matrix and mottles
 - Matrix below the A horizon:
 - Mottles:

V. SURROUNDING LAND USES

A. What is the estimated area of the wetland watershed in acres? **9.5**

B. What are the surrounding land uses?

LAND-USE	ESTIMATED % OF WETLAND WATERSHED
Developed (Industrial/Commercial/Residential)	82
Agricultural/cropland	--
Agricultural/grazing	--
Forested (Upland)	--
Grassed recreation areas/parks	--
Old field	9
Highways, roads, bike trails	4
Other (specify) : Wetland	5

VI. SITE SKETCH

See attached aerial map exhibit

FUNCTIONAL ASSESSMENT

The following assessment requires the evaluator to examine site conditions that provide evidence that a given functional value is present and to assess the significance of the wetland to perform those functions. Positive answers to questions indicate the presence of factors important for the function. The questions are not definitive and are only provided to guide the evaluation. After completing each section, the evaluator should consider the factors observed and use best professional judgement to rate the significance. The ratings should be recorded on page 1 of the assessment.

SPECIAL FEATURES/"RED FLAGS"

1. Y(N) Is the wetland in or adjacent to an area of special natural resource interest (NR 103.04, Wis. Adm. Code)? If so, check those that apply:
 - ☐ Cold water community as defined in s. NR 102.04(3)(b), Wis. Adm. Code, including trout streams, their tributaries, and trout lakes
 - ☐ Lakes Michigan and Superior and the Mississippi River
 - ☐ State or federal designated wild and scenic river
 - ☐ Designated state riverway
 - ☐ Designated state scenic urban waterway
 - ☐ Environmentally sensitive area or environmental corridor identified in an area-wide water quality management plan, special area management plan, special wetland inventory study, or an advanced delineation and identification study
 - ☐ Calcareous fen
 - ☐ State park, forest, trail or recreation area
 - ☐ State and federal fish and wildlife refuges and fish and wildlife management areas
 - ☐ State or federal designated wilderness area
 - ☐ Designated or dedicated state natural area
 - ☐ Wild rice water listed in ch. NR 19.09, Wis. Adm. Code
 - ☐ Surface water identified as an outstanding or exceptional resource water in ch. NR 102, Wis. Adm. Code
2. Y(N) According to the Natural Heritage Inventory (Bureau of Endangered Resources) or direct observations, are there any rare, endangered, or threatened plant or animal species in, near, or using the wetland or adjacent lands? If so, list the species of concern: **Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, has been identified by the Commission staff south of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff southwest of this location.**
3. Y(N) Is the project located in an area that requires a State Coastal Zone Management Plan consistency determination?

Floral Diversity

1. Y(N) Does the wetland support a variety of native plant species (i.e. not a monotypic stand of cattail or giant reed grass and/or not dominated by exotic species such as reed canary grass, brome grass, buckthorn, purple loosestrife, etc.)?
2. Y(N) Is the wetland plant community regionally scarce or rare?

Wildlife and Fishery Habitat

1. List any species observed, evidenced (e.g. tracks, scat, nest/burrow, calls), or expected to utilize the wetland: **Raccoon, White-tailed deer, marsh birds, and waterfowl utilize this area.**
2. Y(N) Does the wetland contain a number of diverse vegetative cover types and a high degree of interspersions of those vegetation types?
3. Y(N) Is the estimated ratio of open water to cover between 30 and 70 percent? What is the estimated ratio? **98%**
4. Y(N) Does the surrounding upland habitat likely support a variety of animal species?
5. Y(N) Is the wetland part of or associated with a wildlife corridor or designated environmental corridor?
No wildlife habitat or environmental corridor mapped here.

6. **Y**(**N**) Is the surrounding habitat and/or the wetland itself a large tract of undeveloped land important for wildlife that requires large home ranges (e.g. bear, woodland passerines)?
7. **Y**(**N**) Is the surrounding habitat and/or the wetland itself a relatively large tract of undeveloped land within an urbanized environment that is important for wildlife?
8. **Y**(**N**) Are there other wetland areas near the subject wetland that may be important to wildlife?
9. **Y**(**N**) Is the wetland contiguous with a permanent waterbody or periodically inundated for sufficient periods of time to provide spawning/nursery habitat for fish?
10. **Y**(**N**) Can the wetland provide significant food base for fish and wildlife (e.g. insects, crustaceans, voles, forage fish, amphibians, reptiles, shrews, wild rice, wild celery, duckweed, pondweeds, watermeal, bulrushes, bur reeds, arrowhead, smartweeds, millets...)? **To a limited extent.**
11. **Y**(**N**) Is the wetland located in a priority watershed/township as identified in the Upper Mississippi and Great Lakes Joint Venture of the North American Waterfowl Management Plan?
12. **Y**(**N**) Is the wetland providing habitat that is scarce to the region?

Flood and Stormwater Storage/Attenuation

1. **Y**(**N**) Are there steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within the watershed (circle those that apply)? **Roadways, driveways, parking lots, and buildings.**
2. **Y**(**N**) Does the wetland significantly reduce run-off velocity due to its size, configuration, braided flow patterns, or vegetation type and density? **Constructed detention pond designed to hold stormwater.**
3. **Y**(**N**) Does the wetland show evidence of flashy water level responses to storm events (debris marks, erosion lines, stormwater inputs, channelized inflow)?
4. **Y**(**N**) Is there a natural feature or human-made structure impeding drainage from the wetland that causes backwater conditions? **A berm is constructed around the detention pond to hold water.**
5. **Y**(**N**) Considering the size of the wetland area in relation to the size of its watershed, at any time during the year is water likely to reach the wetland's storage capacity (i.e. the level of easily observable wetland vegetation)? [For some cases where greater documentation is required, one should determine if the wetland has capacity to hold 25% of the run-off from a 2 year-24 hour storm event.]
6. **Y**(**N**) Considering the location of the wetland in relation to the associated surface water watershed, is the wetland important for attenuating or storing flood or stormwater peaks (i.e. is the wetland located in the mid or lower reaches of the watershed)?

Water Quality Protection

1. **Y**(**N**) Does the wetland receive overland flow or direct discharge of stormwater as a primary source of water (circle that which applies)?
2. **Y**(**N**) Do the surrounding land uses have the potential to deliver significant nutrient and/or sediment loads to the wetland? **Road salt from roadways & parking lots and fertilizer loads from landscaped areas.**
3. **Y**(**N**) Based on your answers to the flood/stormwater section above, does the wetland perform significant flood/stormwater attenuation (residence time to allow settling)?

4. Y ☒ N Does the wetland have significant vegetative density to decrease water energy and allow settling of suspended materials?
5. Y ☒ N Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface water?
6. Y ☒ N Are algal blooms, heavy macrophyte growth, or other signs of excess nutrient loading to the wetland apparent (or historically reported)?

Shoreline Protection

1. Y ☒ N Is the wetland in a lake fringe or riverine setting? If NO, STOP and enter "not applicable" for this function. If YES, then answer the applicable questions.
2. Y ☐ N Is the shoreline exposed to constant wave action caused by long wind fetch or boat traffic?
3. Y ☐ N Is the shoreline and shallow littoral zone vegetated with submerged or emergent vegetation in the swash zone that decrease wave energy or perennial wetland species that form dense root mats and/or species that have strong stems that are resistant to erosive forces?
4. Y ☐ N Is the stream bank prone to erosion due to unstable soils, land uses, or ice floes?
5. Y ☐ N Is the stream bank vegetated with densely rooted shrubs that provide upper bank stability?

Groundwater Recharge and Discharge

1. Y ☒ N Related to discharge, are there observable (or reported) springs located in the wetland, physical indicators of springs such as marl soil, or vegetation indicators such as watercress or marsh marigold present that tend to indicate the presence of groundwater springs?
2. Y ☒ N Related to discharge, may the wetland contribute to the maintenance of base flow in a stream?
3. Y ☒ N Related to recharge, is the wetland located on or near a groundwater divide (e.g. a topographic high)? **This wetland and lands adjacent to this wetland are identified in SEWRPC Planning Report No. 52, A Regional Water Supply Plan for Southeastern Wisconsin, Volumes 1 and 2, as having a high groundwater recharge potential (See map).**

Aesthetics/Recreation/Education and Science

1. Y ☒ N Is the wetland visible from any of the following kinds of vantage points: ☒ roads, public lands, houses, and/or ☒ businesses? (Circle all that apply.)
2. Y ☒ N Is the wetland in or near any population centers? **City of Waukesha**
3. Y ☒ N Is any part of the wetland in public or conservation ownership?
4. Y ☒ N Does the public have direct access to the wetland from public roads or waterways? (Circle those that apply.)
5. Is the wetland itself relatively free of obvious human influences, such as:

a. Y <input checked="" type="radio"/> N Buildings?	e. Y <input checked="" type="radio"/> N Pollution?
b. Y <input checked="" type="radio"/> N Roads?	f. Y <input checked="" type="radio"/> N Filling?
c. Y <input checked="" type="radio"/> N Other structures?	g. Y <input checked="" type="radio"/> N Dredging/drainage?
d. Y <input checked="" type="radio"/> N Trash?	h. Y <input checked="" type="radio"/> N Domination by non-native vegetation?

6. Is the surrounding viewshed relatively free of obvious human influences, such as:
- ☒ ~~Y~~ ☐ ~~N~~ Buildings?
 - ☒ ~~Y~~ ☐ ~~N~~ Roads?
 - ☒ ~~Y~~ ☐ ~~N~~ Other structures?
7. ☒ ~~Y~~ ☐ ~~N~~ Is the wetland organized into a variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water)?
8. ☒ ~~Y~~ ☐ ~~N~~ Does the wetland add to the variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water) within the landscape as a whole?
9. Does the wetland encourage exploration because any of the following factors are present:
- ☒ ~~Y~~ ☐ ~~N~~ Long views within the wetland?
 - ☒ ~~Y~~ ☐ ~~N~~ Long views in the viewshed adjacent to the wetland?
 - ☒ ~~Y~~ ☐ ~~N~~ Convoluted edges within and/or around the wetland border?
 - ☒ ~~Y~~ ☐ ~~N~~ The wetland provides a different (and perhaps more natural/complex) kind of environment from the surrounding land covers?
10. ☒ ~~Y~~ ☐ ~~N~~ Is the wetland currently being used for (or does it have the potential to be used for) the following recreational activities? (Check all that apply.)

ACTIVITY	CURRENT USE	POTENTIAL USE
Nature study/photography		
Hiking/biking/skiing		
Hunting/fishing/trapping		
Boating/canoeing		
Food harvesting		
Others (list)		

11. ☒ ~~Y~~ ☐ ~~N~~ Is the wetland currently being used, and/or does it have the potential for use for educational or scientific study purposes (circle that which applies)?

Wisconsin Department of Natural Resources

RAPID ASSESSMENT METHODOLOGY FOR EVALUATING WETLAND FUNCTIONAL VALUES

GENERAL INFORMATION

Name of Wetland: Plant Community Area Nos. 31
Owner(s): Robert F. Smart – Tax Key No. WAKC0985300
Location: Waukesha County; SE ¼ Section 31, Township 7N, Range 19E
Project Name: Proposed Waukesha West Bypass
Evaluator(s): Donald M. Reed, PhD., Chief Biologist; Lawrence A. Leitner, PhD., Principal Biologist; Christopher J. Jors, Biologist, Southeastern Wisconsin Regional Planning Commission
Date(s) of Site Visit(s): September 8, 2011

Description of seasonality limitations of this inspection due to time of year of the evaluation and/or current hydrologic and climatologic conditions (e.g. after heavy rains, snow or ice cover, during drought year, during spring flood, during bird migration): **Precipitation records in 2011 indicate normal to below normal precipitation (0 to -1 inches) for June, below normal (-1 to -2 inches) for July, below normal (-2 to -3 inches) for August, above normal (+1 to +2 inches) for September.**

WETLAND DESCRIPTION

Wisconsin Wetlands Inventory classification: T3K
Wetland Type: shallow open water deep marsh shallow marsh seasonally flooded basin bog floodplain forest alder thicket sedge meadow coniferous swamp fen atypical (farmed) wetland wet meadow shrub-carr low prairie <u>hardwood swamp</u>
Estimated size of wetland in acres: Study area wetland = 0.2 acre

SUMMARY OF FUNCTIONAL VALUES

Based on the results of the attached functional assessment, rate the significance of each of the functional values for the subject wetland and check the appropriate box. Complete the table as a summary.

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	N/A
Floral Diversity		X			
Wildlife Habitat		X			
Fishery Habitat	X				
Flood/Stormwater Attenuation	X				
Water Quality Protection	X				
Shoreline Protection	X				
Groundwater		X			
Aesthetics/Recreation/Education	X				

List any Special Features/"Red Flags": **Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, has been identified by the Commission staff southeast of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff southwest of this location.**

SITE DESCRIPTION

I. HYDROLOGIC SETTING

A. Describe the geomorphology of the wetland:

- ☐ Depressional (includes slopes, potholes, small lakes, kettles, etc.)
- ☒ Riverine
- ☐ Lake Fringe
- ☐ Extensive Peatland

B. **(Y)N** Has the wetland hydrology been altered by ditching, tiles, dams, culverts, well pumping, diversion of surface flow, or changes to runoff within the watershed (circle those that apply)?
Alterations to hydrology due to road construction & surrounding residential development

C. **(Y)N** Does the wetland have an inlet, outlet, or both (circle those that apply)? **A tributary to Pebble Creek passes through this wetland.**

D. **(Y)N** Is there any field evidence of wetland hydrology such as buttressed tree trunks, adventitious roots, drift lines, water marks, water stained leaves, soil mottling/gleying, organic soils layer, or oxidized rhizospheres (circle those that apply)? **At Sample Site No. 62, hydrology indicators include drift deposits, geomorphic position, and a positive FAC-Neutral test.**

E. **(Y)N** Does the wetland have standing water, and if so what is the average depth in inches? Approximately how much of the wetland is inundated? **Other than stream channel itself, no standing water observed late in growing season.**

F. How is the hydroperiod (seasonal water level pattern) of the wetland classified?

- ☐ Permanently Flooded
- ☒ Seasonally Flooded (water absent at end of growing season)
- ☐ Saturated (surface water seldom present)
- ☐ Artificially Flooded
- ☐ Artificially Drained

G. **(Y)N** Is the wetland a navigable body of water or is a portion of the wetland below the ordinary high-water mark of a navigable water body? List any surface waters associated with the wetland or in proximity to the wetland (note approximate distance from the wetland and navigability determination). Note if there is a surface water connection to other wetlands.
This tributary to Pebble Creek runs through the subject wetland is likely navigable. There is a surface water connection to other wetlands.

II. VEGETATION

A. Identify the vegetation communities present and the dominant species.

	floating leaved community dominated by:
	submerged aquatic community dominated by:
	emergent community dominated by:
	shrub community dominated by:
X	deciduous broad-leaved tree community dominated by: Acer negundo
	coniferous tree community dominated by:
	open sphagnum mat or bog
	sedge meadow/wet prairie community dominated by:
	other (explain):

B. Other plant species identified during site visit:

See attached species list

III. SOILS

A. NRCS Soil Map Classification: **Knowles silt loam (KwB) - Well drained**

B. Field description: **Sample site no. 59 recorded for this plant community area on 9/8/2011.**

☐ Organic (histosol)? If so, is it a muck or a peat?

☒ Mineral soil?

- Mottling, gleying, sulfidic materials, iron or manganese concretions, organic streaking (circle those that apply)
- Soil Description: **See below**
- Depth of mottling/gleying:
- Depth of A Horizon:
- Munsell Color of matrix and mottles
 - Matrix below the A horizon:
 - Mottles:

Depth (inches)	Matrix Color	Redox Concentrations Color	Redox Concentrations Abundance/Contrast	Texture
0-7	2.5Y 2.5/1			Silt loam
7-15	7.5YR 3/1			Silt loam
15-20	7.5YR 3/2	10YR 3/1	Common/Faint	Clay loam

V. SURROUNDING LAND USES

A. What is the estimated area of the wetland watershed in acres? **160**

B. What are the surrounding land uses?

LAND-USE	ESTIMATED % OF WETLAND WATERSHED
Developed (Industrial/Commercial/Residential)	37
Agricultural/cropland	30
Agricultural/grazing	--
Forested (Upland)	17
Grassed recreation areas/parks	--
Old field	2
Highways, roads, bike trails	6
Other (specify) : Wetland	8

VI. SITE SKETCH

See attached aerial map exhibit

FUNCTIONAL ASSESSMENT

The following assessment requires the evaluator to examine site conditions that provide evidence that a given functional value is present and to assess the significance of the wetland to perform those functions. Positive answers to questions indicate the presence of factors important for the function. The questions are not definitive and are only provided to guide the evaluation. After completing each section, the evaluator should consider the factors observed and use best professional judgement to rate the significance. The ratings should be recorded on page 1 of the assessment.

SPECIAL FEATURES/"RED FLAGS"

1. ☒ **Y** ☐ **N** Is the wetland in or adjacent to an area of special natural resource interest (NR 103.04, Wis. Adm. Code)? If so, check those that apply:
 - ☒ Cold water community as defined in s. NR 102.04(3)(b), Wis. Adm. Code, including trout streams, their tributaries, and trout lakes
 - ☐ Lakes Michigan and Superior and the Mississippi River
 - ☐ State or federal designated wild and scenic river
 - ☐ Designated state riverway
 - ☐ Designated state scenic urban waterway
 - ☒ Environmentally sensitive area or environmental corridor identified in an area-wide water quality management plan, special area management plan, special wetland inventory study, or an advanced delineation and identification study – **Secondary Environmental Corridor**
 - ☐ Calcareous fen
 - ☐ State park, forest, trail or recreation area
 - ☐ State and federal fish and wildlife refuges and fish and wildlife management areas
 - ☐ State or federal designated wilderness area
 - ☐ Designated or dedicated state natural area
 - ☐ Wild rice water listed in ch. NR 19.09, Wis. Adm. Code
 - ☐ Surface water identified as an outstanding or exceptional resource water in ch. NR 102, Wis. Adm. Code
2. ☒ **Y** ☐ **N** According to the Natural Heritage Inventory (Bureau of Endangered Resources) or direct observations, are there any rare, endangered, or threatened plant or animal species in, near, or using the wetland or adjacent lands? If so, list the species of concern: **Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, has been identified by the Commission staff southeast of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff southwest of this location.**
3. ☐ **Y** ☒ **N** Is the project located in an area that requires a State Coastal Zone Management Plan consistency determination?

Floral Diversity

1. ☒ **Y** ☐ **N** Does the wetland support a variety of native plant species (i.e. not a monotypic stand of cattail or giant reed grass and/or not dominated by exotic species such as reed canary grass, brome grass, buckthorn, purple loosestrife, etc.)?
2. ☐ **Y** ☒ **N** Is the wetland plant community regionally scarce or rare?

Wildlife and Fishery Habitat

1. List any species observed, evidenced (e.g. tracks, scat, nest/burrow, calls), or expected to utilize the wetland: **This unnamed tributary flows into the Upper Reach of Pebble Creek which contains a total of four fish species classified as very tolerant of pollution. Raccon, White-tailed deer, and Song birds utilize this area.**
2. ☐ **Y** ☒ **N** Does the wetland contain a number of diverse vegetative cover types and a high degree of interspersed of those vegetation types?
3. ☐ **Y** ☒ **N** Is the estimated ratio of open water to cover between 30 and 70 percent? What is the estimated ratio? **5% - Open water in creek bed**
4. ☒ **Y** ☐ **N** Does the surrounding upland habitat likely support a variety of animal species?
Part of a Class II wildlife habitat area

5. ☒ **Y** ☐ **N** Is the wetland part of or associated with a wildlife corridor or designated environmental corridor?
Class II wildlife habitat area and a secondary environmental corridor.
6. ☒ **Y** ☐ **N** Is the surrounding habitat and/or the wetland itself a large tract of undeveloped land important for wildlife that requires large home ranges (e.g. bear, woodland passerines)?
7. ☒ **Y** ☐ **N** Is the surrounding habitat and/or the wetland itself a relatively large tract of undeveloped land within an urbanized environment that is important for wildlife?
8. ☒ **Y** ☐ **N** Are there other wetland areas near the subject wetland that may be important to wildlife?
Important wetlands for wildlife upstream and downstream on this Pebble Creek tributary.
9. ☒ **Y** ☐ **N** Is the wetland contiguous with a permanent waterbody or periodically inundated for sufficient periods of time to provide spawning/nursery habitat for fish?
10. ☒ **Y** ☐ **N** Can the wetland provide significant food base for fish and wildlife (e.g. insects, crustaceans, voles, forage fish, amphibians, reptiles, shrews, wild rice, wild celery, duckweed, pondweeds, watermeal, bulrushes, bur reeds, arrowhead, smartweeds, millets...)?
11. ☒ **Y** ☐ **N** Is the wetland located in a priority watershed/township as identified in the Upper Mississippi and Great Lakes Joint Venture of the North American Waterfowl Management Plan?
12. ☒ **Y** ☐ **N** Is the wetland providing habitat that is scarce to the region?

Flood and Stormwater Storage/Attenuation

1. ☒ **Y** ☐ **N** Are there steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within the watershed (circle those that apply)?
2. ☒ **Y** ☐ **N** Does the wetland significantly reduce run-off velocity due to its size, configuration, braided flow patterns, or vegetation type and density? **Tributary channel carries flows relatively quickly.**
3. ☒ **Y** ☐ **N** Does the wetland show evidence of flashy water level responses to storm events (debris marks, erosion lines, stormwater inputs, channelized inflow)? **Drift lines observed along stream channel**
4. ☒ **Y** ☐ **N** Is there a natural feature or human-made structure impeding drainage from the wetland that causes backwater conditions? **Culvert carrying flows under CTH TT may reach capacity during high flows.**
5. ☒ **Y** ☐ **N** Considering the size of the wetland area in relation to the size of its watershed, at any time during the year is water likely to reach the wetland's storage capacity (i.e. the level of easily observable wetland vegetation)? [For some cases where greater documentation is required, one should determine if the wetland has capacity to hold 25% of the run-off from a 2 year-24 hour storm event.]
6. ☒ **Y** ☐ **N** Considering the location of the wetland in relation to the associated surface water watershed, is the wetland important for attenuating or storing flood or stormwater peaks (i.e. is the wetland located in the mid or lower reaches of the watershed)?

Water Quality Protection

1. ☒ **Y** ☐ **N** Does the wetland receive overland flow or direct discharge of stormwater as a primary source of water (circle that which applies)?
2. ☒ **Y** ☐ **N** Do the surrounding land uses have the potential to deliver significant nutrient and/or sediment loads to the wetland? **Residential development contributes nutrient loads when lawn fertilizers are applied. Agricultural lands contribute nutrients from fertilizers and sediments. In addition, road salt runoff occurs from the impervious surfaces which drain to this wetland.**

3. ☒ ☐ Based on your answers to the flood/stormwater section above, does the wetland perform significant flood/stormwater attenuation (residence time to allow settling)?
4. ☒ ☐ Does the wetland have significant vegetative density to decrease water energy and allow settling of suspended materials?
5. ☒ ☐ Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface water?
6. ☒ ☐ Are algal blooms, heavy macrophyte growth, or other signs of excess nutrient loading to the wetland apparent (or historically reported)?

Shoreline Protection

1. ☒ ☐ Is the wetland in a lake fringe or riverine setting? If NO, STOP and enter "not applicable" for this function. If YES, then answer the applicable questions.
2. ☒ ☐ Is the shoreline exposed to constant wave action caused by long wind fetch or boat traffic?
3. ☒ ☐ Is the shoreline and shallow littoral zone vegetated with submerged or emergent vegetation in the swash zone that decrease wave energy or perennial wetland species that form dense root mats and/or species that have strong stems that are resistant to erosive forces?
4. ☒ ☐ Is the stream bank prone to erosion due to unstable soils, land uses, or ice floes?
5. ☒ ☐ Is the stream bank vegetated with densely rooted shrubs that provide upper bank stability?

Groundwater Recharge and Discharge

1. ☒ ☐ Related to discharge, are there observable (or reported) springs located in the wetland, physical indicators of springs such as marl soil, or vegetation indicators such as watercress or marsh marigold present that tend to indicate the presence of groundwater springs?
2. ☒ ☐ Related to discharge, may the wetland contribute to the maintenance of base flow in a stream?
3. ☒ ☐ Related to recharge, is the wetland located on or near a groundwater divide (e.g. a topographic high)? **The majority of this wetland and lands adjacent to this wetland are identified in SEWRPC Planning Report No. 52, A Regional Water Supply Plan for Southeastern Wisconsin, Volumes 1 and 2, as having a high groundwater recharge potential (See map).**

Aesthetics/Recreation/Education and Science

1. ☒ ☐ Is the wetland visible from any of the following kinds of vantage points: roads, public lands, houses, and/or businesses? (Circle all that apply.)
2. ☒ ☐ Is the wetland in or near any population centers? **City of Waukesha**
3. ☒ ☐ Is any part of the wetland in public or conservation ownership? **Just CTH TT right-of-way**
4. ☒ ☐ Does the public have direct access to the wetland from public roads or waterways? (Circle those that apply.) **Access from CTH TT.**

5. Is the wetland itself relatively free of obvious human influences, such as:

- a. ☒ Y ☒ N Buildings? e. ☒ Y ☒ N Pollution?
 b. ☒ Y ☒ N Roads? f. ☒ Y ☒ N Filling?
 c. ☒ Y ☒ N Other structures? g. ☒ Y ☒ N Dredging/drainage?
 d. ☒ Y ☒ N Trash? h. ☒ Y ☒ N Domination by non-native vegetation?

6. Is the surrounding viewshed relatively free of obvious human influences, such as:

- a. ☒ Y ☒ N Buildings?
 b. ☒ Y ☒ N Roads?
 c. ☒ Y ☒ N Other structures?

7. ☒ Y ☒ N Is the wetland organized into a variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water)?

8. ☒ Y ☒ N Does the wetland add to the variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water) within the landscape as a whole?

9. Does the wetland encourage exploration because any of the following factors are present:

- a. ☒ Y ☒ N Long views within the wetland?
 b. ☒ Y ☒ N Long views in the viewshed adjacent to the wetland?
 c. ☒ Y ☒ N Convolved edges within and/or around the wetland border?
 d. ☒ Y ☒ N The wetland provides a different (and perhaps more natural/complex) kind of environment

from the surrounding land covers?

10. ☒ Y ☒ N Is the wetland currently being used for (or does it have the potential to be used for) the following recreational activities? (Check all that apply.) **Potential use if acquired**

ACTIVITY	CURRENT USE	POTENTIAL USE
Nature study/photography		X
Hiking/biking/skiing		X
Hunting/fishing/trapping		X
Boating/canoeing		X
Food harvesting		
Others (list)		

11. ☒ Y ☒ N Is the wetland currently being used, and/or does it have the potential for use for educational or scientific study purposes (circle that which applies)?

Wisconsin Department of Natural Resources

RAPID ASSESSMENT METHODOLOGY FOR EVALUATING WETLAND FUNCTIONAL VALUES

GENERAL INFORMATION

Name of Wetland: Plant Community Area Nos. 32
Owner(s): Windings Maintenance Corp. – Tax Key No. WAKC0978341
Location: Waukesha County; NW ¼ Section 29, Township 7N, Range 19E
Project Name: Proposed Waukesha West Bypass
Evaluator(s): Donald M. Reed, PhD., Chief Biologist; Lawrence A. Leitner, PhD., Principal Biologist; Christopher J. Jors, Biologist, Southeastern Wisconsin Regional Planning Commission
Date(s) of Site Visit(s): September 8, 2011

Description of seasonality limitations of this inspection due to time of year of the evaluation and/or current hydrologic and climatologic conditions (e.g. after heavy rains, snow or ice cover, during drought year, during spring flood, during bird migration): **Precipitation records in 2011 indicate normal to below normal precipitation (0 to -1 inches) for June, below normal (-1 to -2 inches) for July, below normal (-2 to -3 inches) for August, above normal (+1 to +2 inches) for September.**

WETLAND DESCRIPTION

Wisconsin Wetlands Inventory classification: None
Wetland Type: shallow open water deep marsh <u>shallow marsh</u> seasonally flooded basin bog floodplain forest alder thicket sedge meadow coniferous swamp fen atypical (farmed) wetland <u>wet meadow</u> shrub-carr low prairie hardwood swamp
Estimated size of wetland in acres: Study area wetland = 0.1 acre

SUMMARY OF FUNCTIONAL VALUES

Based on the results of the attached functional assessment, rate the significance of each of the functional values for the subject wetland and check the appropriate box. Complete the table as a summary.

FUNCTION	SIGNIFICANCE				
	Low	Medium	High	Exceptional	N/A
Floral Diversity	X				
Wildlife Habitat	X				
Fishery Habitat	X				
Flood/Stormwater Attenuation	X				
Water Quality Protection	X				
Shoreline Protection	X				
Groundwater	X				
Aesthetics/Recreation/Education	X				

List any Special Features/"Red Flags": **Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, has been identified by the Commission staff southeast of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff southwest of this location.**

SITE DESCRIPTION

I. HYDROLOGIC SETTING

A. Describe the geomorphology of the wetland:

- ☐ Depressional (includes slopes, potholes, small lakes, kettles, etc.)
- ☒ Riverine
- ☐ Lake Fringe
- ☐ Extensive Peatland

B. ☒ Y ☐ N Has the wetland hydrology been altered by ditching, tiles, dams, culverts, well pumping, diversion of surface flow, or changes to runoff within the watershed (circle those that apply)?
Alterations to hydrology due to road construction & surrounding residential development

C. ☒ Y ☐ N Does the wetland have an inlet, outlet, or both (circle those that apply)? **Drainage ditch acts as an outlet.**

D. ☒ Y ☐ N Is there any field evidence of wetland hydrology such as buttressed tree trunks, adventitious roots, drift lines, water marks, water stained leaves, soil mottling/gleying, organic soils layer, or oxidized rhizospheres (circle those that apply)? **At Sample Site No. 63, hydrology indicators include surface water at 15" deep, drift deposits, water-stained leaves, geomorphic position, and a positive FAC-Neutral test.**

E. ☒ Y ☐ N Does the wetland have standing water, and if so what is the average depth in inches? Approximately how much of the wetland is inundated? **Depth of water in stream channel measured at 15 inches. Approx. 50% of wetland is inundated.**

F. How is the hydroperiod (seasonal water level pattern) of the wetland classified?

- ☐ Permanently Flooded
- ☐ Seasonally Flooded (water absent at end of growing season)
- ☐ Saturated (surface water seldom present)
- ☒ Artificially Flooded
- ☐ Artificially Drained

G. ☒ Y ☐ N Is the wetland a navigable body of water or is a portion of the wetland below the ordinary high-water mark of a navigable water body? List any surface waters associated with the wetland or in proximity to the wetland (note approximate distance from the wetland and navigability determination). Note if there is a surface water connection to other wetlands.
This drainage ditch may be navigable. There is a surface water connection to other wetlands via the drainage ditch.

II. VEGETATION

A. Identify the vegetation communities present and the dominant species.

	floating leaved community dominated by:
	submerged aquatic community dominated by:
X	emergent community dominated by: Typha latifolia & Phalaris arundinacea
	shrub community dominated by:
	deciduous broad-leaved tree community dominated by:
	coniferous tree community dominated by:
	open sphagnum mat or bog
	sedge meadow/wet prairie community dominated by:
	other (explain):

B. Other plant species identified during site visit:

See attached species list

III. SOILS

A. NRCS Soil Map Classification: **Lamartine silt loam (LmB) - Somewhat poorly drained**

B. Field description: **Sample site no. 63 recorded for this plant community area on 9/8/2011. Profile description not recorded – hydric by definition due to 15 inches of standing water.**

☐ Organic (histosol)? If so, is it a muck or a peat?

☐ Mineral soil?

- Mottling, gleying, sulfidic materials, iron or manganese concretions, organic streaking (circle those that apply)
- Soil Description:
- Depth of mottling/gleying:
- Depth of A Horizon:
- Munsell Color of matrix and mottles
 - Matrix below the A horizon:
 - Mottles:

V. SURROUNDING LAND USES

A. What is the estimated area of the wetland watershed in acres? **117**

B. What are the surrounding land uses?

LAND-USE	ESTIMATED % OF WETLAND WATERSHED
Developed (Industrial/Commercial/Residential)	83
Agricultural/cropland	--
Agricultural/grazing	--
Forested (Upland)	--
Grassed recreation areas/parks	--
Old field	--
Highways, roads, bike trails	15
Other (specify) : Wetland	2

VI. SITE SKETCH

See attached aerial map exhibit

FUNCTIONAL ASSESSMENT

The following assessment requires the evaluator to examine site conditions that provide evidence that a given functional value is present and to assess the significance of the wetland to perform those functions. Positive answers to questions indicate the presence of factors important for the function. The questions are not definitive and are only provided to guide the evaluation. After completing each section, the evaluator should consider the factors observed and use best professional judgement to rate the significance. The ratings should be recorded on page 1 of the assessment.

SPECIAL FEATURES/"RED FLAGS"

1. ☒ **N** Is the wetland in or adjacent to an area of special natural resource interest (NR 103.04, Wis. Adm. Code)? If so, check those that apply:
 - ☐ Cold water community as defined in s. NR 102.04(3)(b), Wis. Adm. Code, including trout streams, their tributaries, and trout lakes
 - ☐ Lakes Michigan and Superior and the Mississippi River
 - ☐ State or federal designated wild and scenic river
 - ☐ Designated state riverway
 - ☐ Designated state scenic urban waterway
 - ☐ Environmentally sensitive area or environmental corridor identified in an area-wide water quality management plan, special area management plan, special wetland inventory study, or an advanced delineation and identification study
 - ☐ Calcareous fen
 - ☐ State park, forest, trail or recreation area
 - ☐ State and federal fish and wildlife refuges and fish and wildlife management areas
 - ☐ State or federal designated wilderness area
 - ☐ Designated or dedicated state natural area
 - ☐ Wild rice water listed in ch. NR 19.09, Wis. Adm. Code
 - ☐ Surface water identified as an outstanding or exceptional resource water in ch. NR 102, Wis. Adm. Code
2. ☒ **N** According to the Natural Heritage Inventory (Bureau of Endangered Resources) or direct observations, are there any rare, endangered, or threatened plant or animal species in, near, or using the wetland or adjacent lands? If so, list the species of concern: **Butler's gartersnake (*Thamnophis butleri*), a State-designated Threatened species, has been identified by the Commission staff southeast of this location. Blanding's turtle (*Emydoidea blandingii*), a State-designated Threatened species, recorded by Retzer Nature Center staff southwest of this location.**
3. ☒ **N** Is the project located in an area that requires a State Coastal Zone Management Plan consistency determination?

Floral Diversity

1. ☒ **N** Does the wetland support a variety of native plant species (i.e. not a monotypic stand of cattail or giant reed grass and/or not dominated by exotic species such as reed canary grass, brome grass, buckthorn, purple loosestrife, etc.)?
2. ☒ **N** Is the wetland plant community regionally scarce or rare?

Wildlife and Fishery Habitat

1. List any species observed, evidenced (e.g. tracks, scat, nest/burrow, calls), or expected to utilize the wetland: **Raccon, White-tailed deer, amphibians, marsh birds, and song birds utilize this area.**
2. ☒ **N** Does the wetland contain a number of diverse vegetative cover types and a high degree of interspersed of those vegetation types?
3. ☒ **N** Is the estimated ratio of open water to cover between 30 and 70 percent? What is the estimated ratio? **50% - Open water in drainage ditch**
4. ☒ **N** Does the surrounding upland habitat likely support a variety of animal species?
5. ☒ **N** Is the wetland part of or associated with a wildlife corridor or designated environmental corridor?

6. **Y(N)** Is the surrounding habitat and/or the wetland itself a large tract of undeveloped land important for wildlife that requires large home ranges (e.g. bear, woodland passerines)?
7. **Y(N)** Is the surrounding habitat and/or the wetland itself a relatively large tract of undeveloped land within an urbanized environment that is important for wildlife?
8. **Y(N)** Are there other wetland areas near the subject wetland that may be important to wildlife?
9. **Y(N)** Is the wetland contiguous with a permanent waterbody or periodically inundated for sufficient periods of time to provide spawning/nursery habitat for fish?
10. **Y(N)** Can the wetland provide significant food base for fish and wildlife (e.g. insects, crustaceans, voles, forage fish, amphibians, reptiles, shrews, wild rice, wild celery, duckweed, pondweeds, watermeal, bulrushes, bur reeds, arrowhead, smartweeds, millets...)?
11. **Y(N)** Is the wetland located in a priority watershed/township as identified in the Upper Mississippi and Great Lakes Joint Venture of the North American Waterfowl Management Plan?
12. **Y(N)** Is the wetland providing habitat that is scarce to the region?

Flood and Stormwater Storage/Attenuation

1. **Y(N)** Are there steep slopes, large impervious areas, moderate slopes with row cropping, or areas with severe overgrazing within the watershed (circle those that apply)?
2. **Y(N)** Does the wetland significantly reduce run-off velocity due to its size, configuration, braided flow patterns, or vegetation type and density? **Drainage ditch carries flows relatively quickly.**
3. **Y(N)** Does the wetland show evidence of flashy water level responses to storm events (debris marks, erosion lines, stormwater inputs, channelized inflow)? **Drift lines observed along drainage ditch.**
4. **Y(N)** Is there a natural feature or human-made structure impeding drainage from the wetland that causes backwater conditions?
5. **Y(N)** Considering the size of the wetland area in relation to the size of its watershed, at any time during the year is water likely to reach the wetland's storage capacity (i.e. the level of easily observable wetland vegetation)? [For some cases where greater documentation is required, one should determine if the wetland has capacity to hold 25% of the run-off from a 2 year-24 hour storm event.]
6. **Y(N)** Considering the location of the wetland in relation to the associated surface water watershed, is the wetland important for attenuating or storing flood or stormwater peaks (i.e. is the wetland located in the mid or lower reaches of the watershed)?

Water Quality Protection

1. **Y(N)** Does the wetland receive overland flow or direct discharge of stormwater as a primary source of water (circle that which applies)?
2. **Y(N)** Do the surrounding land uses have the potential to deliver significant nutrient and/or sediment loads to the wetland? **Residential development contributes nutrient loads when lawn fertilizers are applied. In addition, road salt runoff occurs from the impervious surfaces which drain to this wetland.**
3. **Y(N)** Based on your answers to the flood/stormwater section above, does the wetland perform significant flood/stormwater attenuation (residence time to allow settling)?

4. ☒ ☐ Does the wetland have significant vegetative density to decrease water energy and allow settling of suspended materials?
5. ☒ ☐ Is the position of the wetland in the landscape such that run-off is held or filtered before entering a surface water?
6. ☒ ☐ Are algal blooms, heavy macrophyte growth, or other signs of excess nutrient loading to the wetland apparent (or historically reported)?

Shoreline Protection

1. ☒ ☐ Is the wetland in a lake fringe or riverine setting? If NO, STOP and enter "not applicable" for this function. If YES, then answer the applicable questions.
2. ☒ ☐ Is the shoreline exposed to constant wave action caused by long wind fetch or boat traffic?
3. ☒ ☐ Is the shoreline and shallow littoral zone vegetated with submerged or emergent vegetation in the swash zone that decrease wave energy or perennial wetland species that form dense root mats and/or species that have strong stems that are resistant to erosive forces?
4. ☒ ☐ Is the stream bank prone to erosion due to unstable soils, land uses, or ice floes?
5. ☒ ☐ Is the stream bank vegetated with densely rooted shrubs that provide upper bank stability?

Groundwater Recharge and Discharge

1. ☒ ☐ Related to discharge, are there observable (or reported) springs located in the wetland, physical indicators of springs such as marl soil, or vegetation indicators such as watercress or marsh marigold present that tend to indicate the presence of groundwater springs?
2. ☒ ☐ Related to discharge, may the wetland contribute to the maintenance of base flow in a stream?
3. ☒ ☐ Related to recharge, is the wetland located on or near a groundwater divide (e.g. a topographic high)?

Aesthetics/Recreation/Education and Science

1. ☒ ☐ Is the wetland visible from any of the following kinds of vantage points: roads, public lands, houses, and/or businesses? (Circle all that apply.)
2. ☒ ☐ Is the wetland in or near any population centers? **City of Waukesha**
3. ☒ ☐ Is any part of the wetland in public or conservation ownership? **Just CTH TT right-of-way**
4. ☒ ☐ Does the public have direct access to the wetland from public roads or waterways? (Circle those that apply.) **Access from CTH TT.**
5. Is the wetland itself relatively free of obvious human influences, such as:

a. <input checked="" type="radio"/> <input type="radio"/> Buildings?	e. <input checked="" type="radio"/> <input type="radio"/> Pollution?
b. <input checked="" type="radio"/> <input type="radio"/> Roads?	f. <input checked="" type="radio"/> <input type="radio"/> Filling?
c. <input checked="" type="radio"/> <input type="radio"/> Other structures?	g. <input checked="" type="radio"/> <input type="radio"/> Dredging/drainage?
d. <input checked="" type="radio"/> <input type="radio"/> Trash?	h. <input checked="" type="radio"/> <input type="radio"/> Domination by non-native vegetation?

6. Is the surrounding viewshed relatively free of obvious human influences, such as:
- ☒ **N** Buildings?
 - ☒ **N** Roads?
 - ☒ **N** Other structures?
7. ☒ **N** Is the wetland organized into a variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water)?
8. ☒ **N** Does the wetland add to the variety of visibly separate areas of similar vegetation, color, and/or texture (including areas of open water) within the landscape as a whole?
9. Does the wetland encourage exploration because any of the following factors are present:
- ☒ **N** Long views within the wetland?
 - ☒ **N** Long views in the viewshed adjacent to the wetland?
 - ☒ **N** Convoluted edges within and/or around the wetland border?
 - ☒ **N** The wetland provides a different (and perhaps more natural/complex) kind of environment from the surrounding land covers?
10. ☒ **N** Is the wetland currently being used for (or does it have the potential to be used for) the following recreational activities? (Check all that apply.) **Potential use if acquired**

ACTIVITY	CURRENT USE	POTENTIAL USE
Nature study/photography		X
Hiking/biking/skiing		
Hunting/fishing/trapping		
Boating/canoeing		
Food harvesting		
Others (list)		

11. ☒ **N** Is the wetland currently being used, and/or does it have the potential for use for educational or scientific study purposes (circle that which applies)?

Section 2

PLANT COMMUNITY AREA MAPS

Proposed Waukesha West Bypass
 Sections 5, 6, 7, 8 and 17, T06N-R19E
 Sections 29, 30, 31, and 32, T07N-R19E
 City and Town of Waukesha, and City of Pewaukee, Waukesha County

Legend

Project Area

Primary Environmental Corridor

Secondary Environmental Corridor

Isolated Natural Resource Area

Natural Area

Wetland

Plant Community Boundary

Plant Community Number

1

N

0 100 200 Feet

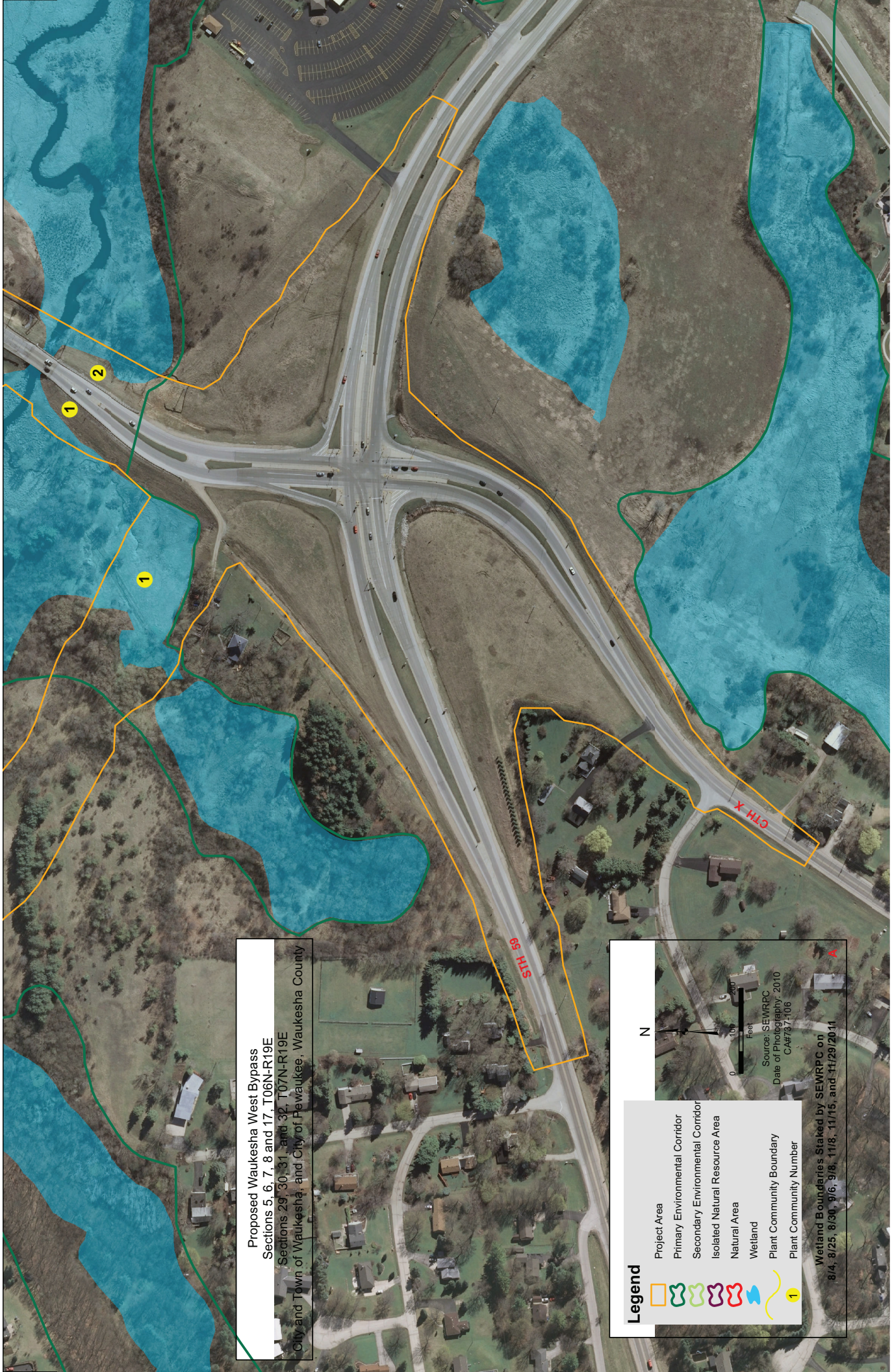
Source: SEWRPC

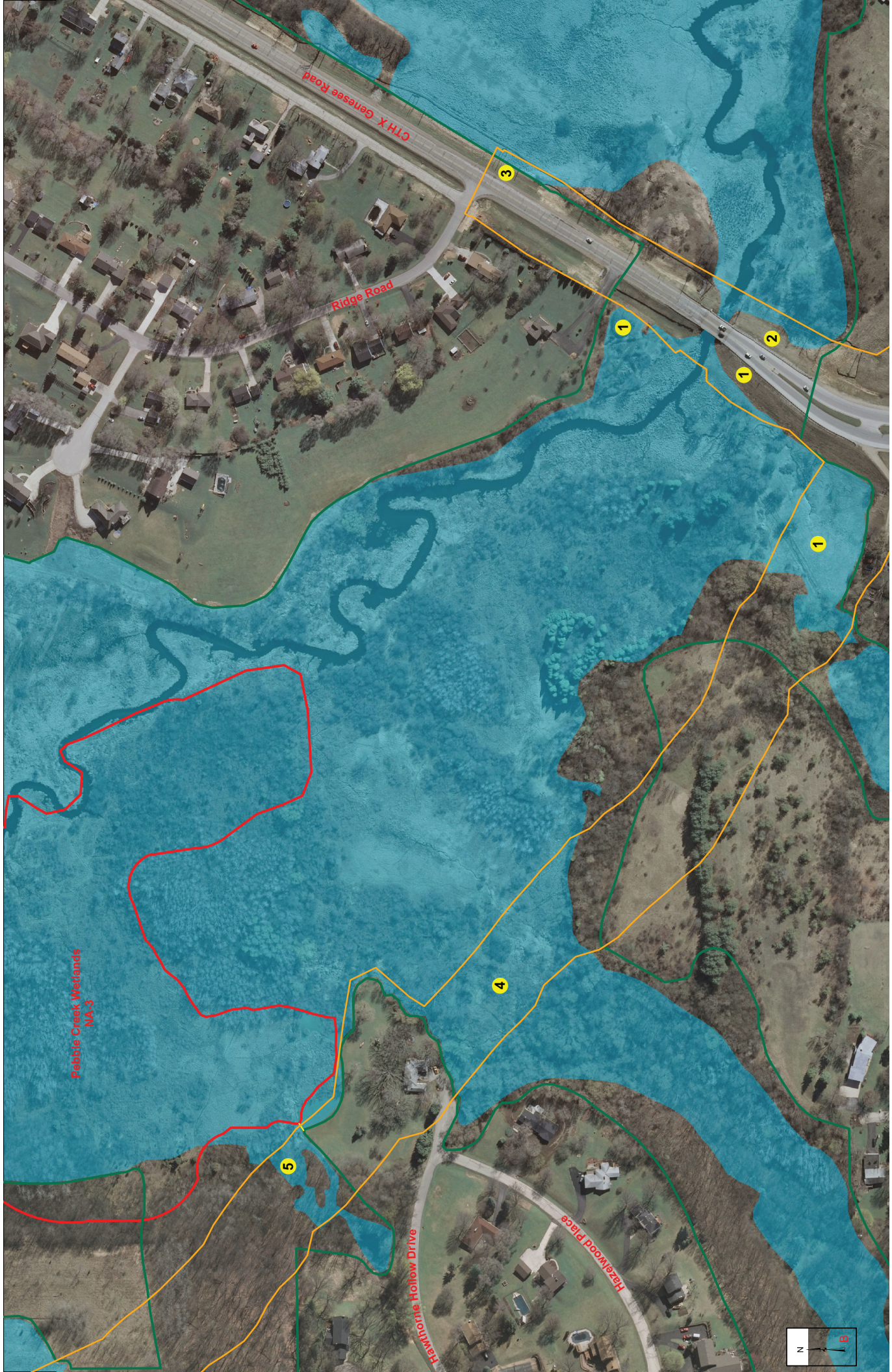
Date of Photography: 2010

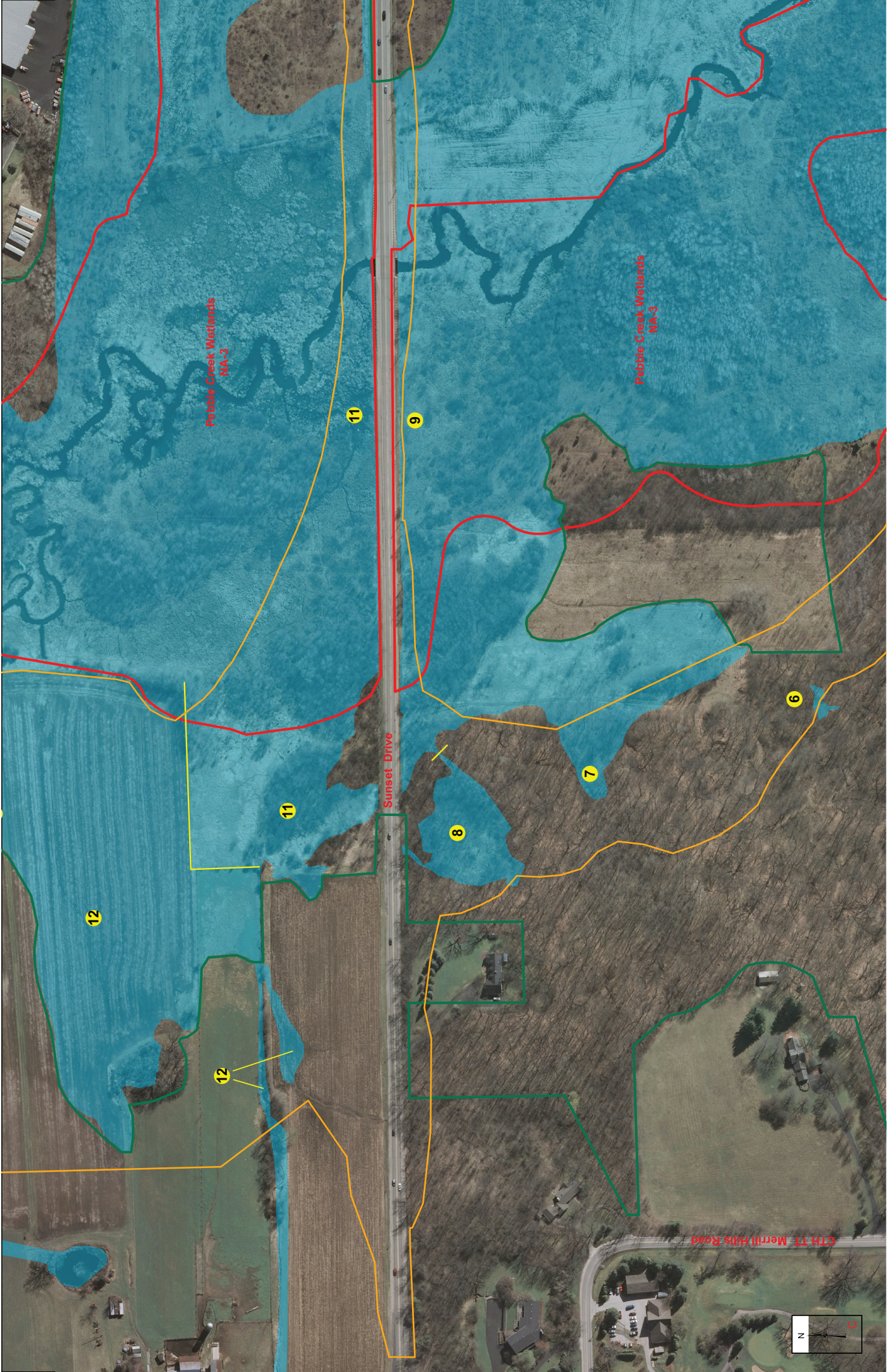
CA4737-106

Wetland Boundaries Staked by SEWRPC on

8/4, 8/25, 8/30, 9/6, 9/8, 11/8, 11/15, and 11/29/2011



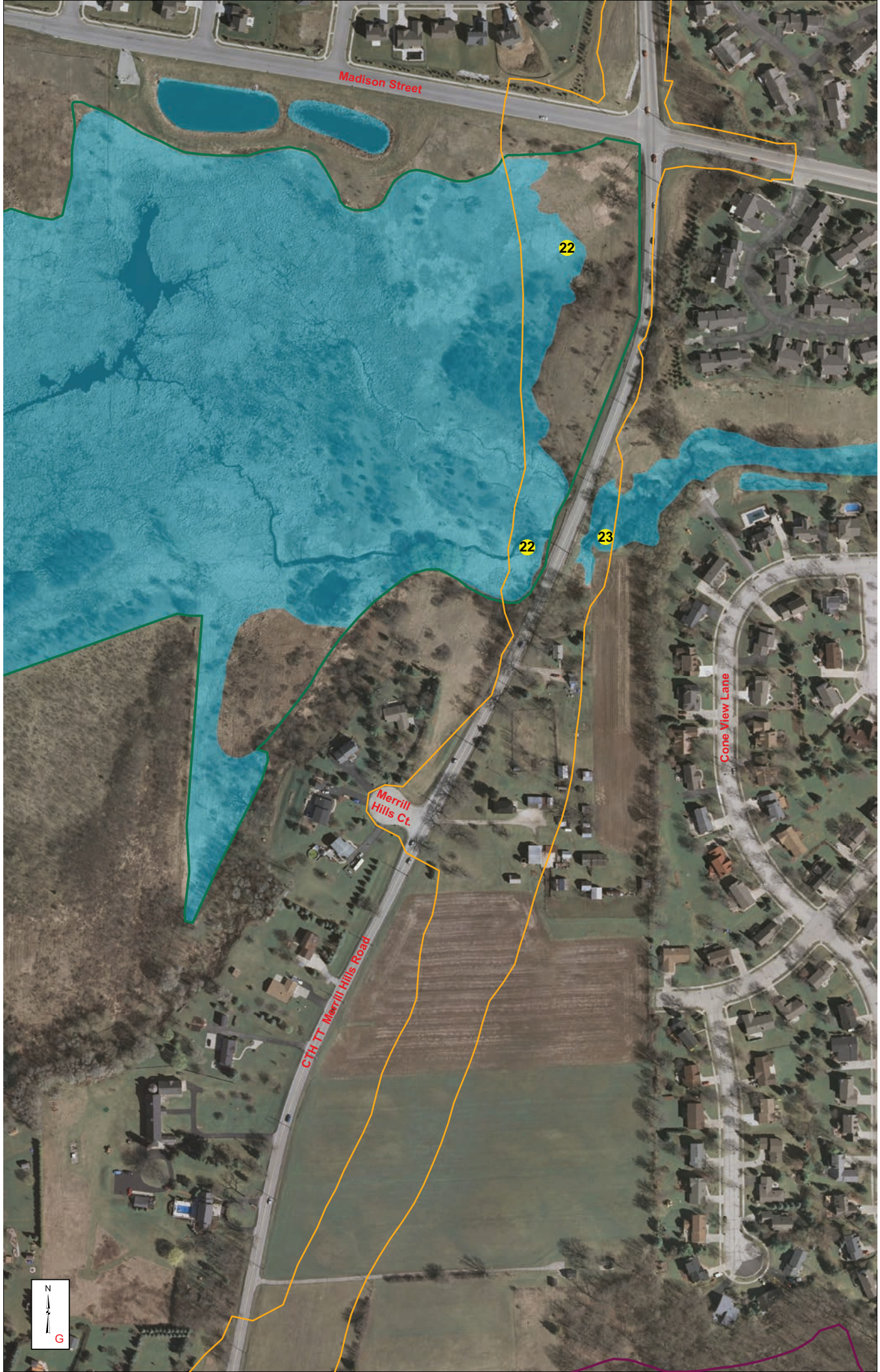


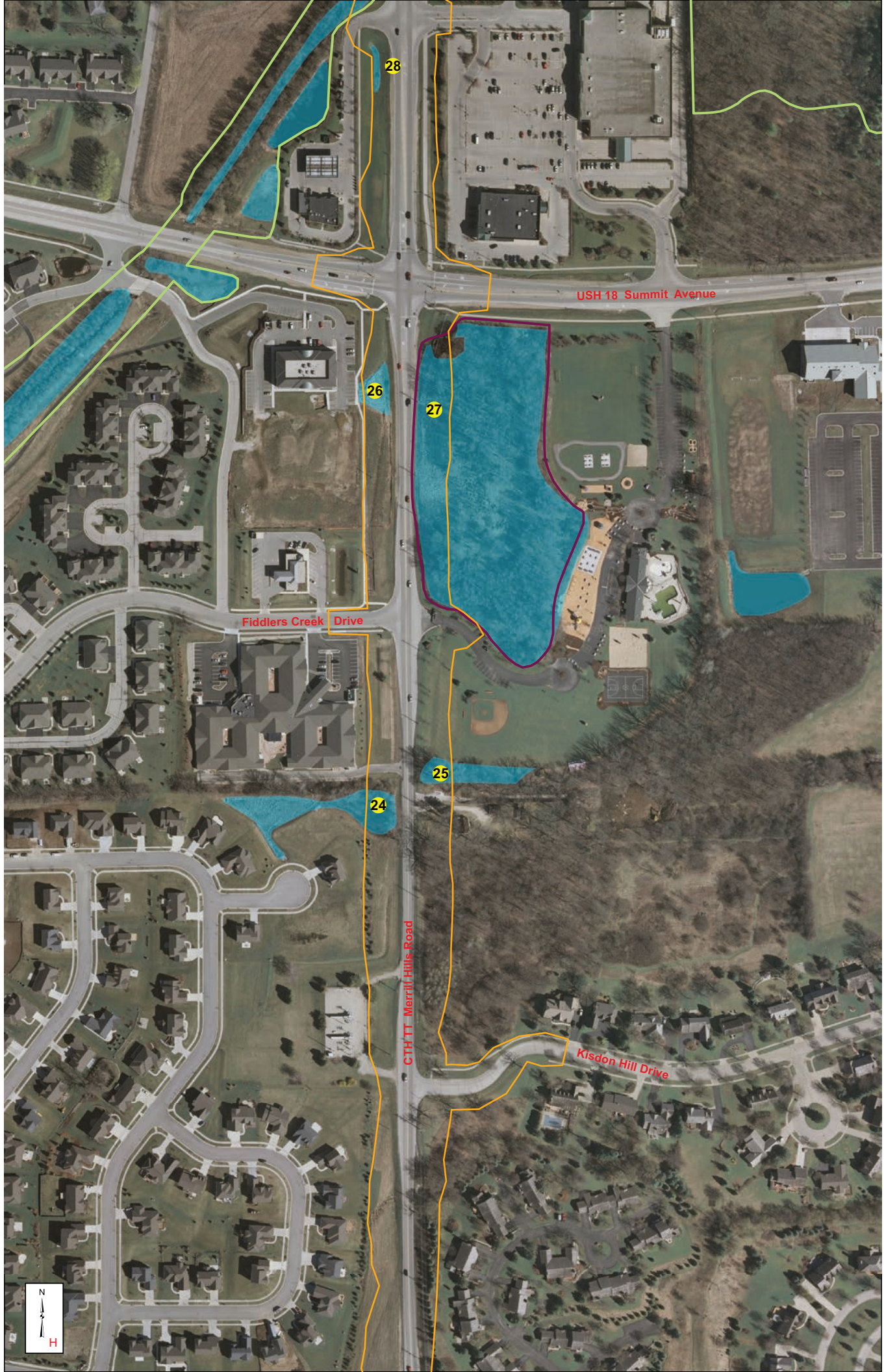














29

30

Meadowbrook Road

Coldwater Creek Drive





Joanne Drive

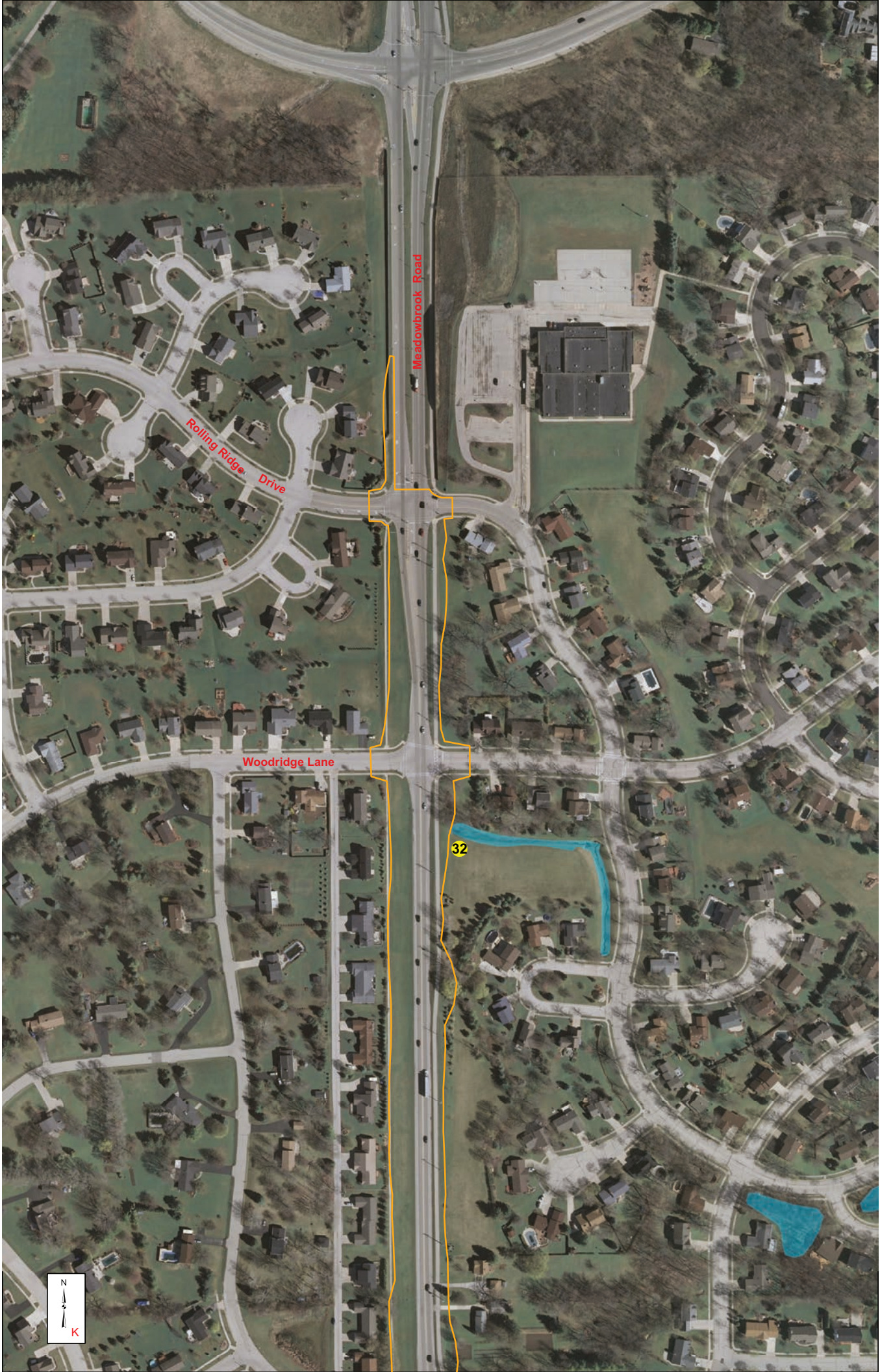
Lancaster Drive

Northview Road

Meadowbrook Road

31

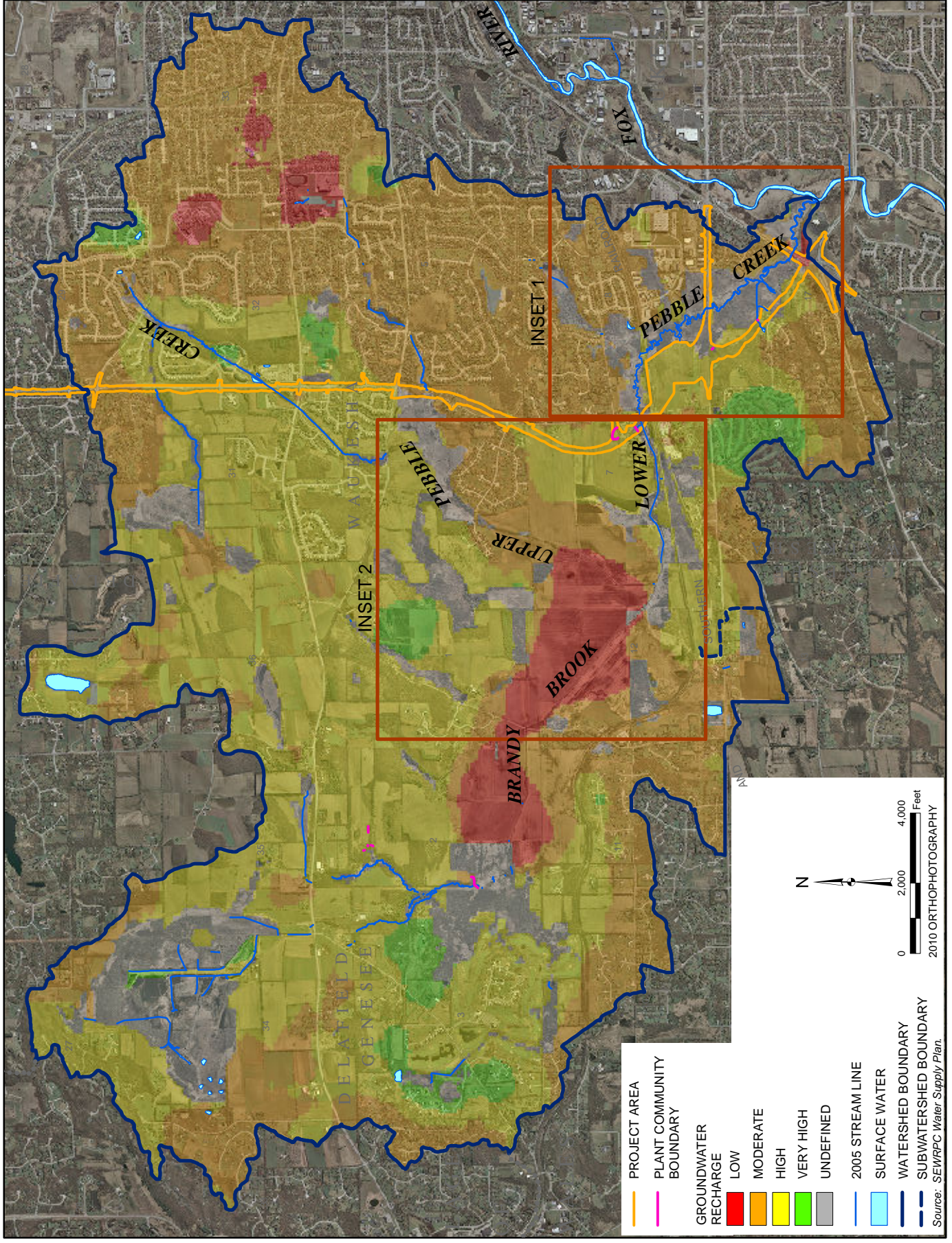




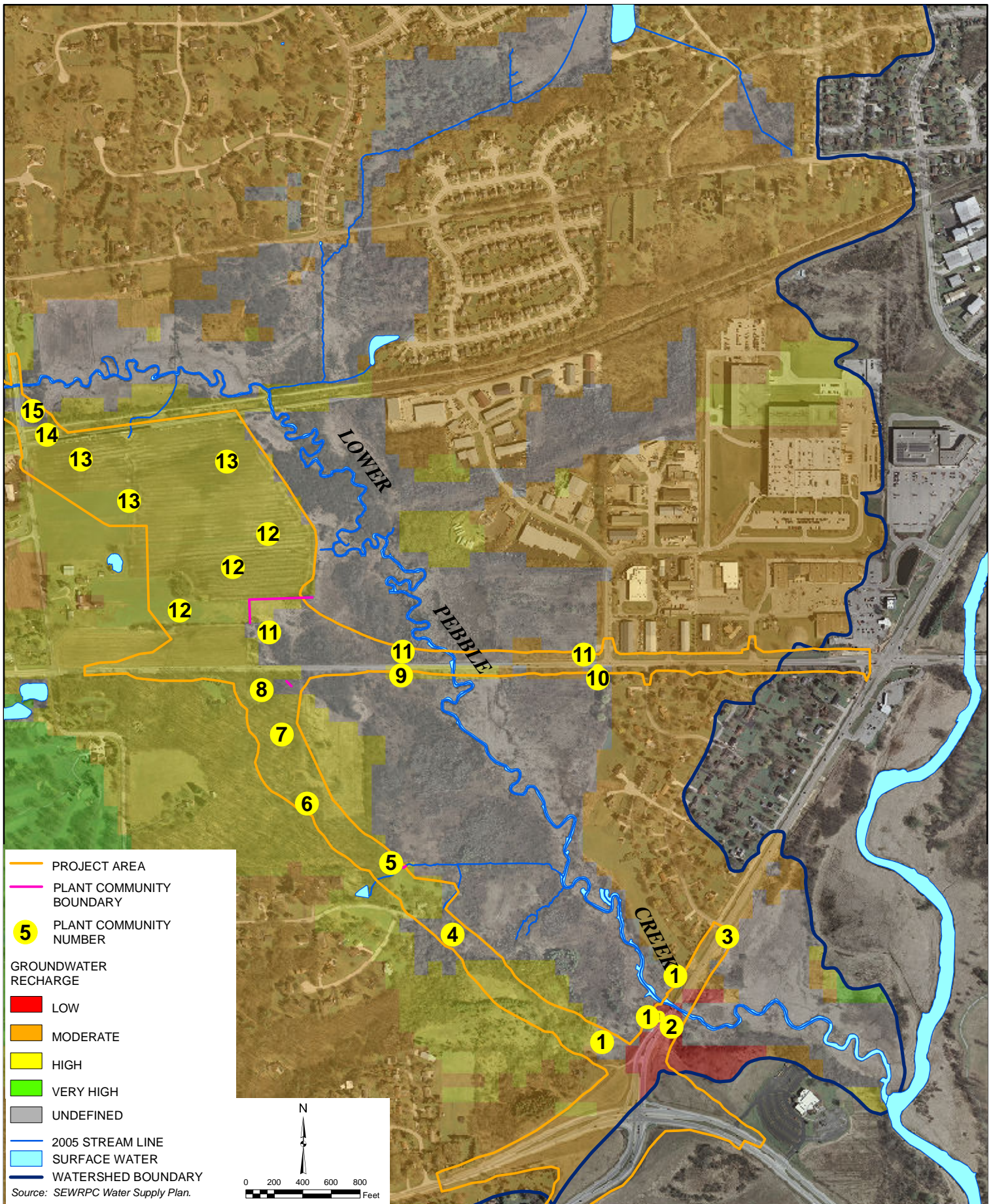
Section 3

PEBBLE CREEK GROUNDWATER RECHARGE AREAS

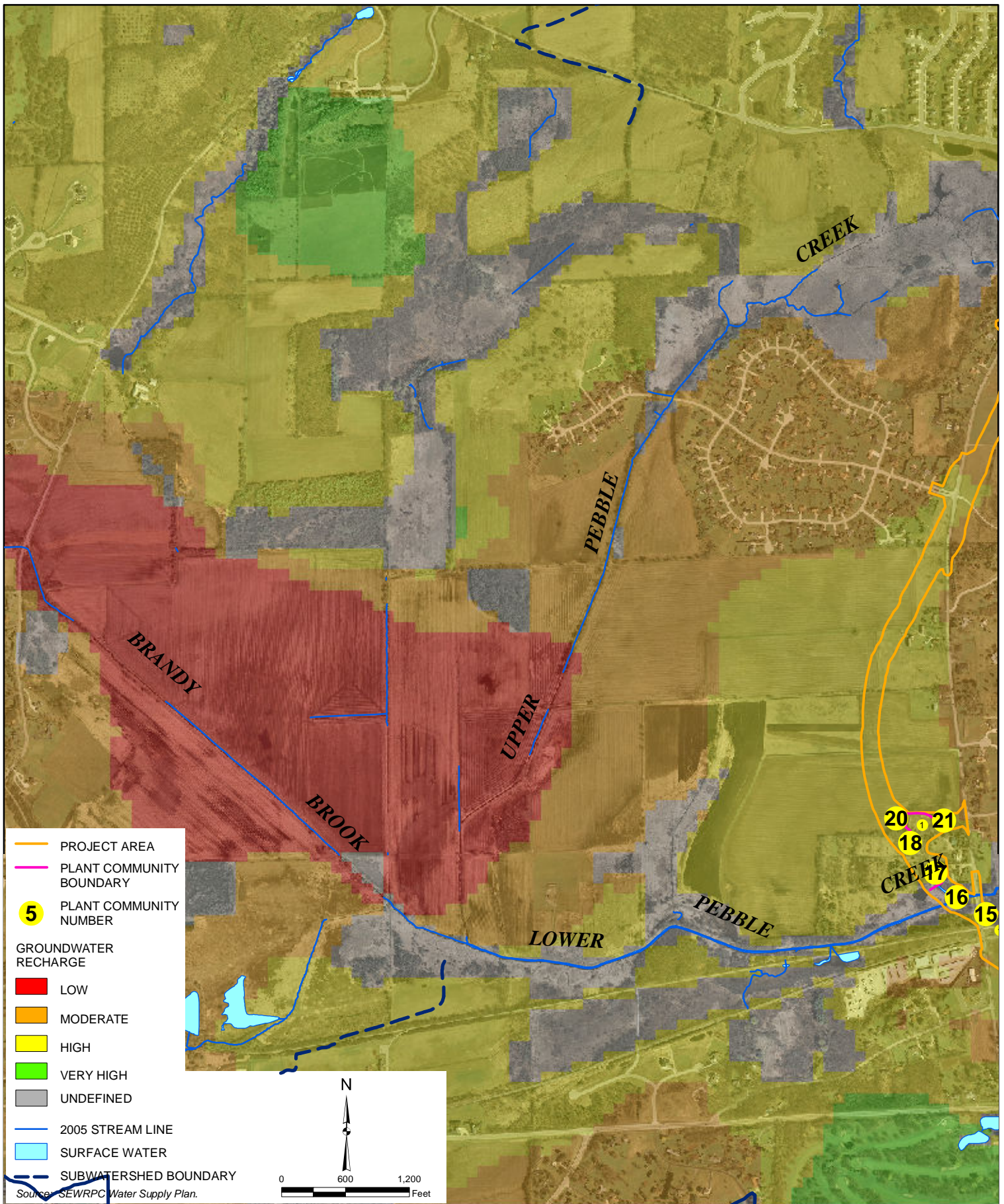
WATER RECHARGE WITHIN THE PEBBLE CREEK WATERSHED



INSET 1



INSET 2



PROPOSED WAUKESHA WEST BYPASS ROUTE WETLAND DELINEATION

SVY3871
CA737-106

EXHIBIT A

PRELIMINARY VEGETATION SURVEY
PROPOSED WAUKESHA WEST BYPASS

Dates: January 12, 2012
August 4, 25, and 30; September 6 and 8; November 8, 15, and 29, 2011

Observers: Donald M. Reed, Ph.D., Chief Biologist
Lawrence A. Leitner, Ph.D., Principal Biologist
Christopher J. Jors, Biologist
Kristi Sherfinski, Biologist
Southeastern Wisconsin Regional Planning Commission

Location: City and Town of Waukesha in parts of U.S. Public Land Survey Sections 5, 6, 7, 8, and 17, Township 6 North, Range 19 East; and the Cities of Pewaukee and Waukesha in parts of U.S. Public Land Survey Sections 29, 30, 31, and 32, Waukesha County, Wisconsin.

Species List: Plant Community Area No. 1

TYPHACEAE

Typha latifolia¹--Broad-leaved cat-tail
Typha angustifolia--Narrow-leaved cat-tail

SPARGANIACEAE

Sparganium eurycarpum--Common burreed

GRAMINEAE

Poa pratensis²--Kentucky bluegrass
Spartina pectinata--Prairie cordgrass
Phalaris arundinacea^{1,2}--Reed canary grass
Echinochloa crusgalli²--Barnyard grass

CYPERACEAE

Scirpus atrovirens--Green bulrush
Carex vulpinoidea--Fox sedge
Carex pellita--Woolly sedge
Carex stricta--Tussock sedge
Carex trichocarpa--Hairy-fruited lake sedge

LEMNACEAE

Lemna minor--Lesser duckweed

JUNCACEAE

Juncus dudleyi--Dudley's rush

LILIACEAE

Asparagus officinalis²--Wild asparagus

SALICACEAE

Populus deltoides--Cottonwood
Salix nigra¹--Black willow
Salix interior--Sandbar willow
Salix discolor--Pussy willow

ULMACEAE

Ulmus americana--American elm

URTICACEAE

Urtica dioica--Stinging nettle
Pilea pumila--Clearweed

POLYGONACEAE

Polygonum amphibium--Water smartweed
Polygonum pennsylvanicum--Pinkweed

CRUCIFERAE

Nasturtium officinale²--Water-cress

ROSACEAE

Rubus occidentalis--Black raspberry
Crataegus sp.--Hawthorn

FABACEAE

Medicago lupulina²--Black medick

ANACARDIACEAE

Rhus radicans--Poison ivy

ACERACEAE

Acer negundo--Boxelder

BALSAMINACEAE

Impatiens capensis--Jewelweed

RHAMNACEAE

Rhamnus cathartica²--Common buckthorn
Rhamnus frangula²--Glossy buckthorn

VITACEAE

Vitis riparia--Riverbank grape
Parthenocissus quinquefolia--Virginia creeper

LYTHRACEAE

Lythrum salicaria²--Purple loosestrife

ONAGRACEAE

Epilobium coloratum--Willow-herb

UMBELLIFERAE

Angelica atropurpurea--Angelica

CORNACEAE

Cornus amomum--Silky dogwood
Cornus stolonifera--Red-osier dogwood

OLEACEAE

Fraxinus pennsylvanica--Green ash
Ligustrum vulgare²--Common privet

ASCLEPIADACEAE

Asclepias incarnata--Marsh milkweed
Asclepias syriaca--Common milkweed

CONVOLVULACEAE

Convolvulus sepium--Hedge bindweed

VERBENACEAE

Verbena hastata--Blue vervain

LABIATAE

Stachys palustris--Hedge-nettle

SOLANACEAE

Solanum dulcamara²--Deadly nightshade

SCROPHULARIACEAE

Mimulus ringens--Monkey flower

CAPRIFOLIACEAE

Viburnum opulus²--European highbush-cranberry.Lonicera x bella²--Hybrid honeysuckle

CUCURBITACEAE

Echinocystis lobata--Wild cucumber

COMPOSITAE

Ambrosia trifida--Giant ragweedSolidago altissima--Tall goldenrodSolidago graminifolia--Grassleaf goldenrodAster novae-angliae--New England asterAster pilosus--Frost asterEupatorium maculatum--Joe-Pye weedCirsium vulgare²--Bull thistleCirsium arvense²--Canada thistle

Total number of plant species: 60

Number of alien, or non-native, plant species: 15 (25 percent)

This approximately 1.6-acre plant community area is part of the Pebble Creek floodplain-wetland complex and consists of shallow marsh, fresh (wet) meadow, shrub-carr, and second growth, Southern wet to wet-mesic lowland hardwoods. Disturbances to the plant community area include dumping, past filling, mowing along the wetland edge, selective cutting of trees, siltation and sedimentation due to stormwater runoff from adjacent lands, and water level changes due to past ditching and draining. No Federal- or State-designated Special Concern, Threatened, or Endangered species were observed during the field inspection.

¹ Co-dominant plant species² Alien or non-native plant species

Plant Community Area No. 2

TYPHACEAE

Typha angustifolia--Narrow-leaved cat-tail

SPARGANIACEAE

Sparganium eurycarpum--Common burreed

GRAMINEAE

Bromus inermis¹--Smooth brome grassPhalaris arundinacea^{1,2}--Reed canary grass

CYPERACEAE

Carex pellita--Woolly sedge

SALICACEAE

Salix nigra--Black willowSalix interior²--Sandbar willow

ROSACEAE

Rosa palustris--Swamp rose

RHAMNACEAE

Rhamnus cathartica¹--Common buckthornRhamnus frangula¹--Glossy buckthorn

VITACEAE

Vitis riparia--Riverbank grape

CORNACEAE

Cornus amomum--Silky dogwood

CUCURBITACEAE

Echinocystis lobata--Wild cucumber

COMPOSITAE

Helianthus grosseserratus--Sawtooth sunflowerXanthium strumarium--CockleburSolidago altissima--Tall goldenrodAster lucidulus--Swamp asterCirsium arvense¹--Canada thistle

Total number of plant species: 18

Number of alien, or non-native, plant species: 5 (28 percent)

This approximately 0.3-acre plant community area is part of the Pebble Creek floodplain-wetland complex and consists of fresh (wet) meadow and shrub-carr (willow thicket). Disturbances to the plant community area include past filling, mowing along the wetland edge, siltation and sedimentation due to stormwater runoff from adjacent lands, and water level changes due to past ditching and draining. No Federal- or State-designated Special Concern, Threatened, or Endangered species were observed during the field inspection.

¹ Alien or non-native plant species² Co-dominant plant species

Plant Community Area No. 3

TYPHACEAE

Typha latifolia¹--Broad-leaved cat-tail

GRAMINEAE

Phalaris arundinacea^{1,2}--Reed canary grass
Echinochloa crusgalli²--Barnyard grass
Setaria faberi²--Giant foxtail

AMARANTHACEAE

Amaranthus retroflexus²--Redroot pigweed

FABACEAE

Melilotus alba²--White sweet clover
Melilotus officinalis²--Yellow sweet clover

VITACEAE

Vitis riparia--Riverbank grape

LYTHRACEAE

Lythrum salicaria²--Purple loosestrife

ONAGRACEAE

Oenothera biennis--Evening-primrose

UMBELLIFERAE

Daucus carota²--Queen Anne's lace

COMPOSITAE

Solidago altissima--Tall goldenrod
Eupatorium maculatum--Joe-Pye weed
Cirsium arvense²--Canada thistle

Total number of plant species: 14

Number of alien, or non-native, plant species: 9 (64 percent)

This approximately 0.1-acre plant community area is part of the Pebble Creek and Fox (Illinois) River floodplain-wetland complexes and consists of shallow marsh and fresh (wet) meadow. Disturbances to the plant community area include past filling, mowing along the wetland edge, siltation and sedimentation due to stormwater runoff from adjacent lands, and water level changes due to past ditching and draining. No Federal- or State-designated Special Concern, Threatened, or Endangered species were observed during the field inspection.

¹ Co-dominant plant species² Alien or non-native plant species

Plant Community Area No. 4

POLYPODIACEAE

Thelypteris palustris--Marsh fern

TYPHACEAE

Typha latifolia--Broad-leaved cat-tail

GRAMINEAE

Bromus ciliatus--Ciliated brome grass

Poa pratensis¹--Kentucky bluegrass

Calamagrostis canadensis--Canada bluejoint

Spartina pectinata--Prairie cordgrass

Phalaris arundinacea^{1,2}--Reed canary grass

Leersia oryzoides--Rice cut grass

CYPERACEAE

Scirpus validus--Soft-stemmed bulrush

Scirpus atrovirens--Green bulrush

Carex vulpinoidea--Fox sedge

Carex granularis--Pale sedge

Carex pellita--Woolly sedge

Carex stricta²--Tussock sedge

Carex hystericina--Bottlebrush sedge

Carex trichocarpa--Hairy-fruited lake sedge

ARACEAE

Arisaema triphyllum--Jack-in-the-pulpit

Symplocarpus foetidus--Skunk cabbage

JUNCACEAE

Juncus dudleyi--Dudley's rush

IRIDACEAE

Iris virginica--Virginia blueflag

SALICACEAE

Populus tremuloides²--Quaking aspen

JUGLANDACEAE

Juglans nigra--Black walnut

FAGACEAE

Quercus macrocarpa--Bur oak

Quercus bicolor--Swamp white oak

ULMACEAE

Ulmus americana--American elm

URTICACEAE

Urtica dioica--Stinging nettle

Pilea pumila--Clearweed

POLYGONACEAE

Rumex verticillatus--Water dock

Rumex crispus¹--Curly dock

Polygonum persicaria¹--Lady's thumb

Polygonum virginianum--Jumpseed

CRUCIFERAE

Nasturtium officinale¹--Water-cress

SAXIFRAGACEAE

Ribes americanum--Wild black currant

ROSACEAE

Geum canadense--White avens

Geum aleppicum--Yellow avens

Rubus occidentalis--Black raspberry

Rubus strigosus--Red raspberry

Rosa carolina--Prairie rose

Prunus serotina--Black cherry

FABACEAE

Trifolium repens¹--White clover

ACERACEAE

Acer negundo²--Boxelder

BALSAMINACEAE

Impatiens capensis²--Jewelweed

RHAMNACEAE

Rhamnus cathartica¹--Common buckthorn

Rhamnus frangula¹--Glossy buckthorn

VITACEAE

Vitis riparia--Riverbank grape

Parthenocissus quinquefolia--Virginia creeper

TILIACEAE

Tilia americana--Basswood

ONAGRACEAE

Epilobium coloratum--Willow-herb

UMBELLIFERAE

Angelica atropurpurea--Angelica

Oxypolis rigidior--Cowbane

CORNACEAE

Cornus amomum--Silky dogwood

Cornus stolonifera--Red-osier dogwood

OLEACEAE

Syringa vulgaris¹--Lilac

APOCYNACEAE

Apocynum androsaemifolium--Dogbane

BORAGINACEAE

Hackelia virginiana--Stickseed

VERBENACEAE

Verbena urticifolia--White vervain

Verbena hastata--Blue vervain

LABIATAE

Stachys palustris--Hedge-nettle

Pycnanthemum virginianum--Mountainmint

Lycopus uniflorus--Northern bugleweed

Lycopus americanus--Cutleaf bugleweed

Mentha arvensis--Wild mint

SOLANACEAE

Solanum dulcamara¹--Deadly nightshade

SCROPHULARIACEAE

Mimulus ringens--Monkey flower

PLANTAGINACEAE

Plantago major¹--Common plantain

RUBIACEAE

Galium aparine--Annual bedstraw

CAPRIFOLIACEAE

Viburnum opulus¹--European highbush-cranberryViburnum lentago--NannyberrySambucus canadensis--ElderberryLonicera X bella¹--Hybrid honeysuckle

DIPSACACEAE

Dipsacus laciniatus¹--Cut-leaved teasel

CUCURBITACEAE

Echinocystis lobata--Wild cucumber

LOBELIACEAE

Lobelia siphilitica--Great blue lobelia

COMPOSITAE

Helianthus grosseserratus--Sawtooth sunflowerBidens sp.--Beggars-ticksAmbrosia trifida--Giant ragweedSolidago gigantea--Giant goldenrodSolidago altissima x gigantea--Hybrid goldenrodSolidago altissima--Tall goldenrodSolidago graminifolia--Grassleaf goldenrodAster lucidulus--Swamp asterEupatorium maculatum--Joe-Pye weedEupatorium perfoliatum--BonesetVernonia fasciculata--Common ironweedArctium minus¹--Common burdockCirsium vulgare¹--Bull thistleTaraxacum officinale¹--Common dandelionSonchus arvensis¹--Sow thistle

Total number of plant species: 87

Number of alien, or non-native, plant species: 18 (21 percent)

This approximately 2.2-acre plant community area is part of the Pebble Creek floodplain-wetland complex and consists of a mosaic of shallow marsh, Southern sedge meadow, atypical (mowed) wetland, fresh (wet) meadow, and second growth, Southern wet to wet-mesic lowland hardwoods. Disturbances to the plant community area include clearing of vegetation, dumping, past filling, mowing, selective cutting of trees, siltation and sedimentation due to stormwater runoff from adjacent lands, and water level changes due to past ditching and draining. No Federal- or State-designated Special Concern, Threatened, or Endangered species were observed during the field inspection.

¹ Alien or non-native plant species² Co-dominant plant species

Plant Community Area No. 5

TYPHACEAE

Typha latifolia--Broad-leaved cat-tail

GRAMINEAE

Phalaris arundinacea^{1,2}--Reed canary grass

CYPERACEAE

Carex vulpinoidea--Fox sedge

SALICACEAE

Populus tremuloides²--Quaking aspen

FAGACEAE

Quercus macrocarpa³--Bur oakQuercus bicolor--Swamp white oak

ULMACEAE

Ulmus americana--American elm

MORACEAE

Morus alba¹--White mulberry

URTICACEAE

Urtica dioica--Stinging nettle

POLYGONACEAE

Polygonum persicaria¹--Lady's thumb

CRUCIFERAE

Alliaria officinalis^{1,3}--Garlic-mustard

SAXIFRAGACEAE

Ribes americanum--Wild black currant

ROSACEAE

Geum canadense--White avensRubus occidentalis--Black raspberryPrunus serotina--Black cherry

ACERACEAE

Acer negundo--Boxelder

BALSAMINACEAE

Impatiens capensis--Jewelweed

RHAMNACEAE

Rhamnus cathartica^{1,2}--Common buckthorn

VITACEAE

Vitis riparia--Riverbank grape

TILIACEAE

Tilia americana--Basswood

ONAGRACEAE

Epilobium coloratum--Willow-herb

CORNACEAE

Cornus amomum--Silky dogwood

BORAGINACEAE

Hackelia virginiana--Stickseed

VERBENACEAE

Verbena urticifolia--White vervainVerbena hastata--Blue vervain

SOLANACEAE

Solanum dulcamara¹--Deadly nightshade

CAPRIFOLIACEAE

Viburnum opulus¹--European highbush-cranberrySambucus canadensis--ElderberryLonicera X bella¹--Hybrid honeysuckle

CUCURBITACEAE

Echinocystis lobata--Wild cucumber

COMPOSITAE

Bidens vulgata--Tall beggars-ticksAmbrosia trifida--Giant ragweedSolidago gigantea--Giant goldenrodSolidago altissima X gigantea--Hybrid goldenrodAster lateriflorus--Calico asterLactuca canadensis--Wild lettuce

Total number of plant species: 36

Number of alien, or non-native, plant species: 8 (22 percent)

This approximately 0.3-acre plant community area is part of a larger wetland complex and consists of second growth, Southern wet to wet-mesic lowland hardwoods. Disturbances to the plant community area include selective cutting of trees, mowing along the wetland edge, and water level changes due to ditching and draining. No Federal- or State-designated Special Concern, Threatened, or Endangered species were observed during the field inspection.

¹ Alien or non-native plant species

² Co-dominant plant species

³ Sub-Dominant plant species

Plant Community Area No. 6

POLYPODIACEAE

Athyrium filix-femina--Lady fern

CYPERACEAE

Carex blanda--Wood sedge

ARACEAE

Arisaema triphyllum--Jack-in-the-pulpitSymplocarpus foetidus--Skunk cabbage

DIOSCOREACEAE

Dioscorea villosa--Wild yam

SALICACEAE

Populus tremuloides--Quaking aspen

JUGLANDACEAE

Juglans nigra--Black walnut

ULMACEAE

Ulmus americana--American elm

URTICACEAE

Pilea pumila¹--Clearweed

POLYGONACEAE

Polygonum virginianum--Jumpseed

RANUNCULACEAE

Anemone canadensis--Canada anemone

CRUCIFERAE

Alliaria officinalis²--Garlic-mustard

ROSACEAE

Geum canadense--White avensRubus occidentalis--Black raspberryPrunus virginiana--Chokecherry

RUTACEAE

Zanthoxylum americanum¹--Prickly-ash

VITACEAE

Vitis riparia--Riverbank grapeParthenocissus quinquefolia--Virginia creeper

OLEACEAE

Fraxinus pennsylvanica¹--Green ash

BORAGINACEAE

Hackelia virginiana--Stickseed

VERBENACEAE

Verbena urticifolia--White vervain

CAPRIFOLIACEAE

Lonicera prolifera--Yellow honeysuckleLonicera X bella²--Hybrid honeysuckle

Total number of plant species: 23

Number of alien, or non-native, plant species: 2 (9 percent)

This approximately 0.1-acre plant community area consists of second growth, Southern wet to wet-mesic lowland hardwoods along a drainage way. Disturbances to the plant community area include selective cutting of trees. No Federal- or State-designated Special Concern, Threatened, or Endangered species were observed during the field inspection.

¹ Co-dominant plant species

² Alien or non-native plant species

Plant Community Area No. 7

EQUISETACEAE

Equisetum arvense--Common horsetail

GRAMINEAE

Poa pratensis¹--Kentucky bluegrassAgrostis stolonifera¹--Redtop grassPhalaris arundinacea^{1,2}--Reed canary grassLeersia oryzoides--Rice cut grass

CYPERACEAE

Scirpus pendulus--Red bulrushCarex radiata--Straight-styled wood sedgeCarex vulpinoidea--Fox sedgeCarex bebbii--Bebb's oval sedgeCarex granularis--Pale sedge

ARACEAE

Arisaema triphyllum--Jack-in-the-pulpit

JUNCACEAE

Juncus dudleyi--Dudley's rush

DIOSCOREACEAE

Dioscorea villosa--Wild yam

SALICACEAE

Populus grandidentata--Large-toothed aspenSalix nigra--Black willowSalix interior²--Sandbar willowSalix bebbiana--Beaked willow

JUGLANDACEAE

Juglans nigra--Black walnutCarya ovata--Shagbark hickory

ULMACEAE

Ulmus americana--American elm

URTICACEAE

Pilea pumila--Clearweed

POLYGONACEAE

Polygonum persicaria¹--Lady's thumbPolygonum virginianum--Jumpseed

CRUCIFERAE

Alliaria officinalis¹--Garlic-mustard

SAXIFRAGACEAE

Ribes americanum--Wild black currant

ROSACEAE

Geum canadense--White avensGeum aleppicum--Yellow avensRubus occidentalis--Black raspberry

OXALIDACEAE

Oxalis stricta--Common wood sorrel

RUTACEAE

Zanthoxylum americanum--Prickly-ash

ACERACEAE

Acer negundo--Boxelder

BALSAMINACEAE

Impatiens capensis²--Jewelweed

RHAMNACEAE

Rhamnus cathartica¹--Common buckthornRhamnus frangula¹--Glossy buckthorn

VITACEAE

Vitis riparia--Riverbank grapeParthenocissus quinquefolia--Virginia creeper

ONAGRACEAE

Circaea lutetiana--Enchanter's nightshade

UMBELLIFERAE

Daucus carota¹--Queen Anne's lace

CORNACEAE

Cornus stolonifera--Red-osier dogwood

OLEACEAE

Fraxinus pennsylvanica--Green ash

BORAGINACEAE

Hackelia virginiana--Stickseed

LABIATAE

Stachys palustris--Hedge-nettleMonarda fistulosa--Wild bergamot

LOBELIACEAE

Lobelia siphilitica--Great blue lobelia

COMPOSITAE

Bidens sp.--Beggars-ticksSolidago altissima--Tall goldenrodSolidago graminifolia--Grassleaf goldenrodEupatorium rugosum--White snakeroot

Total number of plant species: 48

Number of alien, or non-native, plant species: 8 (17 percent)

This approximately 0.8-acre plant community area is part of a larger wetland complex and consists of fresh (wet) meadow, shrub-carr (willow thicket), and second growth, Southern wet to wet-mesic lowland hardwoods. Disturbances to the plant community area include selective cutting of trees and siltation and sedimentation due to stormwater runoff from adjacent lands. No Federal- or State-designated Special Concern, Threatened, or Endangered species were observed during the field inspection.

¹ Alien or non-native plant species² Co-dominant plant species

Plant Community Area No. 8

GRAMINEAE

Poa pratensis¹--Kentucky bluegrass
Dactylis glomerata¹--Orchard grass
Muhlenbergia mexicana x racemosa--Muhly grass
Phalaris arundinacea^{1,2}--Reed canary grass

CYPERACEAE

Carex blanda--Wood sedge

ARACEAE

Symplocarpus foetidus³--Skunk cabbage

SALICACEAE

Populus tremuloides--Quaking aspen
Salix nigra--Black willow

JUGLANDACEAE

Juglans nigra--Black walnut

FAGACEAE

Quercus rubra⁴--Northern red oak

CRUCIFERAE

Hesperis matronalis¹--Dames rocket
Alliaria officinalis¹--Garlic-mustard

ROSACEAE

Geum canadense--White avens
Geum aleppicum--Yellow avens
Rubus occidentalis--Black raspberry
Rosa multiflora¹--Multiflora rose

RUTACEAE

Zanthoxylum americanum³--Prickly-ash

ACERACEAE

Acer negundo--Boxelder

BALSAMINACEAE

Impatiens capensis²--Jewelweed

RHAMNACEAE

Rhamnus cathartica¹--Common buckthorn

VITACEAE

Vitis riparia--Riverbank grape

ONAGRACEAE

Epilobium coloratum--Willow-herb

UMBELLIFERAE

Torilis japonica¹--Japanese hedge parsley

CORNACEAE

Cornus amomum--Silky dogwood
Cornus stolonifera--Red-osier dogwood

OLEACEAE

Fraxinus pennsylvanica²--Green ash

BORAGINACEAE

Hackelia virginiana--Stickseed

LABIATAE

Monarda fistulosa--Wild bergamot

CAPRIFOLIACEAE

Viburnum lentago--NannyberrySambucus canadensis--ElderberryLonicera X bella¹--Hybrid honeysuckle

COMPOSITAE

Solidago gigantea--Giant goldenrodAster lateriflorus--Calico aster

Total number of plant species: 33

Number of alien, or non-native, plant species: 9 (27 percent)

This approximately 1.1-acre plant community area is part of a larger wetland complex and consists of sedge fen and second growth, Southern wet to wet-mesic lowland hardwoods. Disturbances to the plant community area include selective cutting of trees and siltation and sedimentation due to stormwater runoff from adjacent lands. No Federal- or State-designated Special Concern, Threatened, or Endangered species were observed during the field inspection.

¹ Alien or non-native plant species

² Co-dominant plant species

³ Sub-Dominant plant species

⁴ Growing along the wetland edge

Plant Community Area No. 9

TYPHACEAE

Typha latifolia--Broad-leaved cat-tail

GRAMINEAE

Glyceria striata--Fowl manna grass
Poa pratensis¹--Kentucky bluegrass
Calamagrostis canadensis--Canada bluejoint
Agrostis stolonifera¹--Redtop grass
Spartina pectinata--Prairie cordgrass
Phalaris arundinacea^{1,2}--Reed canary grass
Leersia oryzoides--Rice cut grass

CYPERACEAE

Scirpus atrovirens--Green bulrush
Scirpus pendulus--Red bulrush
Carex vulpinoidea--Fox sedge
Carex blanda--Wood sedge
Carex granularis--Pale sedge
Carex pellita--Woolly sedge
Carex stricta²--Tussock sedge
Carex hystericina--Bottlebrush sedge

ARACEAE

Arisaema triphyllum--Jack-in-the-pulpit

LEMNACEAE

Lemna minor--Lesser duckweed

JUNCACEAE

Juncus dudleyi--Dudley's rush
Juncus torreyi--Torrey's rush

SALICACEAE

Populus tremuloides--Quaking aspen
Salix nigra--Black willow
Salix bebbiana²--Beaked willow

JUGLANDACEAE

Juglans nigra--Black walnut

FAGACEAE

Quercus macrocarpa--Bur oak

ULMACEAE

Ulmus americana--American elm

URTICACEAE

Urtica dioica--Stinging nettle
Pilea pumila--Clearweed

POLYGONACEAE

Polygonum amphibium--Water smartweed
Polygonum virginianum--Jumpseed

RANUNCULACEAE

Thalictrum dasycarpum--Tall meadow rue

CRUCIFERAE

Barbarea vulgaris¹--Yellow rocket
Hesperis matronalis¹--Dames rocket

SAXIFRAGACEAE

Ribes americanum--Wild black currant

ROSACEAE

Geum aleppicum--Yellow avens
Rubus occidentalis--Black raspberry
Rosa multiflora¹--Multiflora rose
Prunus virginiana--Chokecherry

FABACEAE

Melilotus alba¹--White sweet clover
Amphicarpa bracteata--Hog peanut

ANACARDIACEAE

Rhus radicans--Poison ivy

ACERACEAE

Acer negundo--Boxelder

BALSAMINACEAE

Impatiens capensis--Jewelweed

RHAMNACEAE

Rhamnus cathartica¹--Common buckthorn
Rhamnus frangula¹--Glossy buckthorn

VITACEAE

Vitis riparia--Riverbank grape
Parthenocissus quinquefolia--Virginia creeper

VIOLACEAE

Viola sororia--Woolly blue violet

LYTHRACEAE

Lythrum salicaria¹--Purple loosestrife

ONAGRACEAE

Oenothera biennis--Evening-primrose

UMBELLIFERAE

Daucus carota¹--Queen Anne's lace
Angelica atropurpurea--Angelica
Pastinaca sativa¹--Wild parsnip

CORNACEAE

Cornus amomum--Silky dogwood
Cornus stolonifera--Red-osier dogwood

OLEACEAE

Fraxinus pennsylvanica--Green ash

APOCYNACEAE

Apocynum androsaemifolium--Dogbane
Apocynum cannabinum--Indian hemp

ASCLEPIADACEAE

Asclepias incarnata--Marsh milkweed
Asclepias syriaca--Common milkweed

CONVOLVULACEAE

Cuscuta sp.--Dodder

BORAGINACEAE

Hackelia virginiana--Stickseed

VERBENACEAE

Verbena hastata--Blue vervain

Verbena stricta--Hoary vervain

LABIATAE

Stachys palustris--Hedge-nettle

Monarda fistulosa--Wild bergamot

Lycopus uniflorus--Northern bugleweed

Lycopus americanus--Cutleaf bugleweed

Mentha arvensis--Wild mint

SOLANACEAE

Solanum dulcamara¹--Deadly nightshade

SCROPHULARIACEAE

Pedicularis lanceolata--Swamp lousewort

CAPRIFOLIACEAE

Viburnum opulus¹--European highbush-cranberry

Viburnum lentago--Nannyberry

Sambucus canadensis--Elderberry

Lonicera X bella¹--Hybrid honeysuckle

DIPSACACEAE

Dipsacus laciniatus¹--Cut-leaved teasel

CUCURBITACEAE

Echinocystis lobata--Wild cucumber

COMPOSITAE

Helianthus strumosus--Pale-leaved wood sunflower

Helianthus grosseserratus--Sawtooth sunflower

Ambrosia trifida--Giant ragweed

Solidago gigantea--Giant goldenrod

Solidago altissima--Tall goldenrod

Solidago graminifolia--Grassleaf goldenrod

Aster novae-angliae--New England aster

Aster lucidulus--Swamp aster

Aster pilosus--Frost aster

Aster lateriflorus--Calico aster

Aster simplex--Marsh aster

Eupatorium maculatum--Joe-Pye weed

Eupatorium perfoliatum--Boneset

Cirsium vulgare¹--Bull thistle

Cirsium arvense¹--Canada thistle

Sonchus arvensis¹--Sow thistle

Lactuca serriola¹--Prickly wild lettuce

Cichorium intybus¹--Chicory

Total number of plant species: 95

Number of alien, or non-native, plant species: 21 (22 percent)

This approximately 1.4-acre plant community area is part of the Pebble Creek floodplain-wetland complex and consists of Southern sedge meadow, fresh (wet) meadow, shrub-carr, and second growth, Southern wet to wet-mesic lowland hardwoods. Disturbances to the plant community area include past agricultural land management activities, selective cutting of trees, siltation and sedimentation due to stormwater runoff from adjacent lands, and water level changes due to past ditching and draining. No Federal- or State-designated Special Concern, Threatened, or Endangered species were observed during the field inspection. It should be mentioned that portions of this plant community are part of the Pebble Creek Wetlands, a Natural Area of local significance (NA-3).

¹ Alien or non-native plant species

² Co-dominant plant species

Plant Community Area No. 10

EQUISETACEAE

Equisetum arvense--Common horsetail

TYPHACEAE

Typha latifolia¹--Broad-leaved cat-tailTypha angustifolia--Narrow-leaved cat-tail

GRAMINEAE

Poa pratensis²--Kentucky bluegrassAgropyron repens²--Quack grassAgrostis stolonifera²--Redtop grassPhalaris arundinacea²--Reed canary grass

CYPERACEAE

Scirpus validus--Soft-stemmed bulrushScirpus atrovirens--Green bulrushCarex pellita--Woolly sedgeCarex stricta--Tussock sedge

JUNCACEAE

Juncus dudleyi--Dudley's rush

LILIACEAE

Asparagus officinalis²--Wild asparagus

SALICACEAE

Salix bebbiana--Beaked willowSalix petiolaris--Petioled willow

POLYGONACEAE

Rumex crispus²--Curly dockPolygonum amphibium--Water smartweed

RANUNCULACEAE

Thalictrum dasycarpum--Tall meadow rue

ROSACEAE

Fragaria virginiana--Wild strawberryGeum aleppicum--Yellow avensCrataegus sp.--Hawthorn

FABACEAE

Trifolium repens²--White cloverLathyrus palustris--Marsh vetchling

RHAMNACEAE

Rhamnus cathartica²--Common buckthornRhamnus frangula²--Glossy buckthorn

VITACEAE

Vitis riparia--Riverbank grapeParthenocissus quinquefolia--Virginia creeper

LYTHRACEAE

Lythrum salicaria²--Purple loosestrife

ONAGRACEAE

Oenothera biennis--Evening-primrose

UMBELLIFERAE

Daucus carota²--Queen Anne's lace

UMBELLIFERAE cont'

Pastinaca sativa²--Wild parsnip

CORNACEAE

Cornus stolonifera--Red-osier dogwood

APOCYNACEAE

Apocynum androsaemifolium--Dogbane

ASCLEPIADACEAE

Asclepias syriaca--Common milkweed

CONVOLVULACEAE

Convolvulus sepium--Hedge bindweed

VERBENACEAE

Verbena hastata--Blue vervain

LABIATAE

Glechoma hederacea²--Creeping CharlieStachys palustris--Hedge-nettleMonarda fistulosa--Wild bergamot

SCROPHULARIACEAE

Penstemon digitalis²--Foxglove beardtongue

PLANTAGINACEAE

Plantago major²--Common plantain

CAPRIFOLIACEAE

Viburnum opulus²--European highbush-cranberryLonicera x bella²--Hybrid honeysuckle

CUCURBITACEAE

Echinocystis lobata--Wild cucumber

LOBELIACEAE

Lobelia spicata--Pale spike lobelia

COMPOSITAE

Helianthus grosseserratus¹--Sawtooth sunflowerHelenium autumnale--SneezeweedChrysanthemum leucanthemum²--Ox-eye daisySolidago gigantea--Giant goldenrodSolidago altissima¹--Tall goldenrodSolidago riddellii--Riddell's goldenrodSolidago graminifolia--Grassleaf goldenrodAster novae-angliae--New England asterAster pilosus--Frost asterErigeron strigosus--Daisy fleabaneCirsium vulgare²--Bull thistleTaraxacum officinale²--Common dandelionSonchus arvensis²--Sow thistleCichorium intybus²--Chicory

Total number of plant species: 59

Number of alien, or non-native, plant species: 22 (37 percent)

This approximately 0.2-acre plant community area is part of the Pebble Creek floodplain-wetland complex and consists of shallow marsh, fresh (wet) meadow, and atypical (mowed) wetland. Disturbances to the plant community area include past agricultural land management activities, mowing, siltation and sedimentation due to stormwater runoff from adjacent lands, and water level changes due to past ditching and draining. No Federal- or State-designated Special Concern, Threatened, or Endangered species were observed during the field inspection.

¹ Co-dominant plant species

² Alien or non-native plant species

Plant Community Area No. 11

EQUISETACEAE

Equisetum arvense--Common horsetail

TYPHACEAE

Typha latifolia¹--Broad-leaved cat-tail

Typha angustifolia--Narrow-leaved cat-tail

ALISMACEAE

Sagittaria latifolia--Common arrowhead

GRAMINEAE

Bromus inermis²--Smooth brome grass

Glyceria striata--Fowl manna grass

Poa pratensis²--Kentucky bluegrass

Poa palustris--Marsh bluegrass

Dactylis glomerata²--Orchard grass

Agrostis stolonifera²--Redtop grass

Phalaris arundinacea^{1,2}--Reed canary grass

Leersia oryzoides--Rice cut grass

Setaria sp.²--Foxtail

CYPERACEAE

Cyperus esulentus--Chufa

Scirpus atrovirens--Green bulrush

Scirpus pendulus--Red bulrush

Carex blanda--Wood sedge

Carex granularis--Pale sedge

Carex pellita--Woolly sedge

Carex stricta--Tussock sedge

Carex trichocarpa--Hairy-fruited lake sedge

ARACEAE

Arisaema triphyllum--Jack-in-the-pulpit

LEMNACEAE

Lemna minor--Lesser duckweed

JUNCACEAE

Juncus dudleyi--Dudley's rush

Juncus torreyi--Torrey's rush

LILIACEAE

Smilacina stellata--Starry Solomons plume

SALICACEAE

Populus tremuloides--Quaking aspen

Populus deltoides--Cottonwood

Salix nigra--Black willow

Salix interior¹--Sandbar willow

Salix bebbiana--Beaked willow

Salix discolor--Pussy willow

JUGLANDACEAE

Juglans nigra--Black walnut

ULMACEAE

Ulmus americana--American elm

URTICACEAE

Pilea pumila--Clearweed

POLYGONACEAE

Polygonum amphibium--Water smartweed
Polygonum persicaria²--Lady's thumb
Polygonum virginianum--Jumpseed
Polygonum convolvulus²--Black bindweed

AMARANTHACEAE

Amaranthus retroflexus²--Redroot pigweed

RANUNCULACEAE

Ranunculus cymbalaria³--Seaside buttercup
Anemone virginiana--Thimbleweed
Anemone canadensis--Canada anemone

SAXIFRAGACEAE

Ribes americanum--Wild black currant

ROSACEAE

Fragaria virginiana--Wild strawberry
Geum canadense--White avens
Geum aleppicum--Yellow avens
Rubus occidentalis--Black raspberry
Rosa multiflora²--Multiflora rose

FABACEAE

Melilotus alba²--White sweet clover

OXALIDACEAE

Oxalis stricta--Common wood sorrel

RUTACEAE

Zanthoxylum americanum--Prickly-ash

ANACARDIACEAE

Rhus radicans--Poison ivy

ACERACEAE

Acer saccharinum--Silver maple
Acer negundo--Boxelder

BALSAMINACEAE

Impatiens capensis--Jewelweed

RHAMNACEAE

Rhamnus cathartica^{1,2}--Common buckthorn
Rhamnus frangula²--Glossy buckthorn

VITACEAE

Vitis riparia--Riverbank grape
Parthenocissus quinquefolia--Virginia creeper

LYTHRACEAE

Lythrum salicaria²--Purple loosestrife

ONAGRACEAE

Epilobium coloratum--Willow-herb
Oenothera biennis--Evening-primrose

UMBELLIFERAE

Daucus carota²--Queen Anne's lace
Cicuta maculata--Spotted water-hemlock
Angelica atropurpurea--Angelica
Oxypolis rigidior--Cowbane

UMBELLIFERAE cont'

Pastinaca sativa²--Wild parsnip

CORNACEAE

Cornus amomum--Silky dogwood

Cornus stolonifera--Red-osier dogwood

OLEACEAE

Fraxinus pennsylvanica--Green ash

APOCYNACEAE

Apocynum cannabinum--Indian hemp

ASCLEPIADACEAE

Asclepias incarnata--Marsh milkweed

Asclepias syriaca--Common milkweed

BORAGINACEAE

Hackelia virginiana--Stickseed

VERBENACEAE

Verbena urticifolia--White vervain

Verbena hastata--Blue vervain

LABIATAE

Prunella vulgaris--Selfheal

Monarda fistulosa--Wild bergamot

Lycopus americanus--Cutleaf bugleweed

Mentha arvensis--Wild mint

SOLANACEAE

Solanum dulcamara²--Deadly nightshade

SCROPHULARIACEAE

Linaria vulgaris²--Butter-and-eggs

PLANTAGINACEAE

Plantago major²--Common plantain

CAPRIFOLIACEAE

Viburnum opulus²--European highbush-cranberry

Viburnum lentago--Nannyberry

Sambucus canadensis--Elderberry

Lonicera maackii²--Amur honeysuckle

Lonicera x bella²--Hybrid honeysuckle

CUCURBITACEAE

Echinocystis lobata--Wild cucumber

COMPOSITAE

Helianthus grosseserratus--Sawtooth sunflower

Rudbeckia hirta--Black-eyed Susan

Bidens vulgata--Tall beggars-ticks

Bidens sp.--Beggars-ticks

Ambrosia trifida--Giant ragweed

Ambrosia artemisiifolia--Common ragweed

Solidago gigantea--Giant goldenrod

Solidago altissima¹--Tall goldenrod

Solidago rigida--Stiff goldenrod

Solidago riddellii--Riddell's goldenrod

Solidago graminifolia--Grassleaf goldenrod

Aster novae-angliae--New England aster

Aster lucidulus--Swamp aster

COMPOSITAE cont'

Aster pilosus--Frost aster
Aster simplex--Marsh aster
Eupatorium maculatum--Joe-Pye weed
Eupatorium perfoliatum--Boneset
Sonchus arvensis²--Sow thistle
Lactuca canadensis--Wild lettuce
Lactuca serriola²--Prickly wild lettuce

Total number of plant species: 110

Number of alien, or non-native, plant species: 24 (22 percent)

This approximately 8.9-acre plant community area is part of the Pebble Creek floodplain-wetland complex and consists of shallow marsh, Southern sedge meadow, fresh (wet) meadow, wet-mesic prairie, shrub-carr (willow thicket), and second growth, Southern wet to wet-mesic lowland hardwoods. Disturbances to the plant community area include agricultural land management activities, dumping, filling, mowing, selective cutting of trees, siltation and sedimentation due to stormwater runoff from adjacent lands, and water level changes due to past ditching and draining. Two State-designated Threatened species, Seaside buttercup (Ranunculus cymbalaria), and Butler's gartersnake (Thamnophis butleri), were observed during both the recent and past field inspections. It should be mentioned that portions of this plant community are part of the Pebble Creek Wetlands, a Natural Area of local significance (NA-3).

¹ Co-dominant plant species

² Alien or non-native plant species

³ A State-designated Threatened plant species

Plant Community Area No. 12

TYPHACEAE

Typha latifolia--Broad-leaved cat-tail
Typha angustifolia--Narrow-leaved cat-tail

GRAMINEAE

Poa pratensis¹--Kentucky bluegrass
Agrostis stolonifera¹--Redtop grass
Phalaris arundinacea^{1,2}--Reed canary grass
Digitaria sanguinalis¹--Hairy crab grass
Panicum capillare--Witch grass
Panicum dichotomiflorum--Knee grass
Echinochloa crusgalli¹--Barnyard grass
Setaria glauca¹--Yellow foxtail
Zea mays¹--Domestic corn

CYPERACEAE

Scirpus atrovirens--Green bulrush
Carex stricta--Tussock sedge
Carex spp.--Sedges

LEMNACEAE

Lemna minor--Lesser duckweed

SALICACEAE

Populus deltoides--Cottonwood
Salix nigra--Black willow
Salix interior--Sandbar willow
Salix discolor--Pussy willow

URTICACEAE

Urtica dioica--Stinging nettle

POLYGONACEAE

Rumex crispus¹--Curly dock
Polygonum persicaria¹--Lady's thumb

ROSACEAE

Rubus occidentalis--Black raspberry
Rosa multiflora¹--Multiflora rose

FABACEAE

Trifolium pratense¹--Red clover
Trifolium repens¹--White clover

ACERACEAE

Acer negundo--Boxelder

RHAMNACEAE

Rhamnus cathartica¹--Common buckthorn

VITACEAE

Vitis riparia--Riverbank grape

ONAGRACEAE

Epilobium coloratum--Willow-herb

CORNACEAE

Cornus amomum--Silky dogwood
Cornus stolonifera--Red-osier dogwood

VERBENACEAE

Verbena hastata--Blue vervain

PLANTAGINACEAE

Plantago major¹--Common plantain

CAPRIFOLIACEAE

Lonicera X bella¹--Hybrid honeysuckle

CUCURBITACEAE

Echinocystis lobata--Wild cucumber

COMPOSITAE

Helianthus grosseserratus--Sawtooth sunflowerBidens sp.--Beggars-ticksAmbrosia trifida--Giant ragweedSolidago gigantea--Giant goldenrodSolidago altissima--Tall goldenrodAster lucidulus--Swamp asterArctium minus¹--Common burdockCirsium arvense¹--Canada thistle

Total number of plant species: 44+

Number of alien, or non-native, plant species: 17 (39 percent)

This approximately 11.0-acre plant community area is part of a larger wetland complex and consists of fresh (wet) meadow and atypical (farmed) wetland. Disturbances to the plant community area include agricultural land management activities including plowing, filling, pond excavation, side casting of dredge spoil material, siltation and sedimentation due to stormwater runoff from adjacent lands, and water level changes due to past ditching, draining, and tiling. No Federal- or State-designated Special Concern, Threatened, or Endangered species were observed during the field inspection.

¹ Alien or non-native plant species

² Co-dominant plant species

Plant Community Area No. 13

GRAMINEAE

Poa pratensis¹--Kentucky bluegrass
Dactylis glomerata¹--Orchard grass
Agropyron repens¹--Quack grass
Spartina pectinata--Prairie cordgrass
Phalaris arundinacea¹--Reed canary grass
Panicum dichotomiflorum²--Knee grass
Setaria glauc¹--Yellow foxtail
Setaria faberi¹--Giant foxtail

CYPERACEAE

Cyperus esculentus--Chufa
Carex blanda--Wood sedge
Carex sp.--Sedge

SALICACEAE

Salix nigra--Black willow

URTICACEAE

Urtica dioica--Stinging nettle

POLYGONACEAE

Rumex crispus¹--Curly dock
Polygonum persicaria¹--Lady's thumb

CRUCIFERAE

Alliaria officinalis¹--Garlic-mustard

ROSACEAE

Rubus occidentalis--Black raspberry
Rubus sp.--Raspberry

FABACEAE

Trifolium pratense¹--Red clover
Trifolium repens¹--White clover
Medicago lupulina¹--Black medick
Glycine max¹--Soy-bean

ACERACEAE

Acer negundo--Boxelder

RHAMNACEAE

Rhamnus cathartica¹--Common buckthorn

UMBELLIFERAE

Daucus carota¹--Queen Anne's lace

CORNACEAE

Cornus racemosa--Grey dogwood

VERBENACEAE

Verbena hastata--Blue vervain

LABIATAE

Glechoma hederacea¹--Creeping Charlie

SOLANACEAE

Physalis heterophylla--Clammy ground-cherry
Solanum dulcamara¹--Deadly nightshade

DIPSACACEAE

Dipsacus sylvestris¹--Common teasel

COMPOSITAE

Helianthus grosseserratus--Sawtooth sunflower

Xanthium strumarium--Cocklebur

Solidago altissima--Tall goldenrod

Aster pilosus--Frost aster

Cirsium arvense¹--Canada thistle

Taraxacum officinale¹--Common dandelion

Sonchus arvensis¹--Sow thistle

Total number of plant species: 38

Number of alien, or non-native, plant species: 21 (55 percent)

This approximately 10.6-acre plant community area is part of the Pebble Creek wetland complex and consists of atypical (farmed) wetland. Disturbances to the plant community area include agricultural land management activities including plowing, siltation and sedimentation due to stormwater runoff from adjacent lands, and water level changes due to past ditching, draining, and tiling. No Federal- or State-designated Special Concern, Threatened, or Endangered species were observed during the field inspection.

¹ Alien or non-native plant species

² Dominant plant species

Plant Community Area No. 14

GRAMINEAE

Calamagrostis canadensis--Canada bluejoint
Spartina pectinata--Prairie cordgrass
Phalaris arundinacea¹--Reed canary grass
Setaria faberi¹--Giant foxtail
Andropogon gerardii²--Big bluestem

LILIACEAE

Smilacina stellata--Starry Solomons plume
Smilax herbacea--Carrion flower

SALICACEAE

Populus tremuloides--Quaking aspen

BETULACEAE

Corylus americana--Hazel nut

FAGACEAE

Quercus macrocarpa--Bur oak

ULMACEAE

Ulmus americana--American elm

CARYOPHYLLACEAE

Lychnis alba¹--White campion

SAXIFRAGACEAE

Ribes americanum--Wild black currant

ROSACEAE

Geum aleppicum--Yellow avens
Rubus occidentalis--Black raspberry
Rosa carolina--Prairie rose
Prunus americana--Wild plum

FABACEAE

Coronilla varia¹--Crown-vetch

EUPHORBIACEAE

Euphorbia corollata--Flowering spurge

ANACARDIACEAE

Rhus glabra--Smooth sumac

ACERACEAE

Acer negundo--Boxelder

RHAMNACEAE

Rhamnus cathartica¹--Common buckthorn

VITACEAE

Vitis riparia--Riverbank grape

UMBELLIFERAE

Daucus carota¹--Queen Anne's lace
Pastinaca sativa¹--Wild parsnip

CORNACEAE

Cornus racemosa--Grey dogwood

ASCLEPIADACEAE

Asclepias syriaca--Common milkweed

POLEMONIACEAE

Polemonium reptans--Jacobs ladder

LABIATAE

Nepeta cataria¹--CatnipMonarda fistulosa--Wild bergamotPycnanthemum virginianum--Mountainmint

RUBIACEAE

Galium boreale--Northern bedstraw

DIPSACACEAE

Dipsacus laciniatus²--Cut-leaved teasel

COMPOSITAE

Helianthus grosseserratus--Sawtooth sunflowerRatibida pinnata--Grey-headed coneflowerSilphium integrifolium--RosinweedSilphium terebinthinaceum--Prairie-dockSolidago altissima--Tall goldenrodSolidago rigida--Stiff goldenrodAster pilosus--Frost asterCirsium arvense¹--Canada thistle

Total number of plant species: 41

Number of alien, or non-native, plant species: 9 (22 percent)

This approximately 0.3-acre plant community area is part of the Pebble Creek floodplain-wetland complex and consists of wet-mesic prairie. Disturbances to the plant community area include dumping, filling, railroad right-of-way management related activities, siltation and sedimentation due to stormwater runoff from adjacent lands, and water level changes due to past ditching and draining. No Federal- or State-designated Special Concern, Threatened, or Endangered species were observed during the field inspection. In addition, this plant community area is part of the Pebble Creek Railroad Prairie, a Natural Area of local significance (NA-3).

¹ Alien or non-native plant species² Co-dominant plant species

Plant Community Area No. 15

EQUISETACEAE

Equisetum fluviatile--Pipes

TYPHACEAE

Typha latifolia--Broad-leaved cat-tailTypha angustifolia¹--Narrow-leaved cat-tail

GRAMINEAE

Phalaris arundinacea^{1,2}--Reed canary grass

CYPERACEAE

Scirpus validus--Soft-stemmed bulrushScirpus atrovirens--Green bulrushCarex stricta--Tussock sedgeCarex lacustris--Lake sedgeCarex trichocarpa--Hairy-fruited lake sedge

IRIDACEAE

Iris virginica--Virginia blueflag

SALICACEAE

Populus tremuloides--Quaking aspenPopulus deltoides--CottonwoodSalix babylonica²--Weeping willowSalix nigra--Black willowSalix interior--Sandbar willowSalix bebbiana--Beaked willowSalix discolor--Pussy willow

ULMACEAE

Ulmus americana--American elm

URTICACEAE

Urtica dioica--Stinging nettle

SAXIFRAGACEAE

Ribes americanum--Wild black currant

ACERACEAE

Acer saccharinum--Silver mapleAcer negundo¹--Boxelder

BALSAMINACEAE

Impatiens capensis--Jewelweed

RHAMNACEAE

Rhamnus cathartica^{1,2}--Common buckthornRhamnus frangula²--Glossy buckthorn

VITACEAE

Vitis riparia--Riverbank grape

LYTHRACEAE

Lythrum salicaria²--Purple loosestrife

CORNACEAE

Cornus amomum--Silky dogwoodCornus stolonifera--Red-osier dogwood

LABIATAE

Prunella vulgaris--Selfheal

CAPRIFOLIACEAE

Viburnum opulus²--European highbush-cranberryViburnum lentago--NannyberrySambucus canadensis--ElderberryLonicera x bella²--Hybrid honeysuckle

DIPSACACEAE

Dipsacus laciniatus²--Cut-leaved teasel

CUCURBITACEAE

Echinocystis lobata--Wild cucumber

COMPOSITAE

Rudbeckia laciniata--Green-headed coneflowerAmbrosia trifida--Giant ragweedSolidago altissima--Tall goldenrodAster simplex--Marsh asterEupatorium maculatum--Joe-Pye weedCirsium arvense²--Canada thistle

Total number of plant species: 42

Number of alien, or non-native, plant species: 9 (21 percent)

This approximately 0.4-acre plant community area is part of the Pebble Creek floodplain-wetland complex and consists of shallow marsh, fresh (wet) meadow, shrub-carr, and second growth, Southern wet to wet-mesic lowland hardwoods. Disturbances to the plant community area include past filling, selective cutting of trees, and siltation and sedimentation due to stormwater runoff from adjacent lands. No Federal- or State-designated Special Concern, Threatened, or Endangered species were observed during the field inspection.

¹ Co-dominant plant species

² Alien or non-native plant species

Plant Community Area No. 16

GRAMINEAE

Calamagrostis canadensis--Canada bluejoint
Spartina pectinata--Prairie cordgrass
Phalaris arundinacea^{1,2}--Reed canary grass

CYPERACEAE

Carex stricta--Tussock sedge
Carex trichocarpa--Hairy-fruited lake sedge

LEMNACEAE

Lemna minor--Lesser duckweed

SALICACEAE

Populus tremuloides²--Quaking aspen
Salix nigra--Black willow
Salix discolor--Pussy willow

ULMACEAE

Ulmus americana--American elm

MORACEAE

Morus alba¹--White mulberry

URTICACEAE

Urtica dioica--Stinging nettle

POLYGONACEAE

Polygonum amphibium--Water smartweed
Polygonum persicaria¹--Lady's thumb

SAXIFRAGACEAE

Ribes americanum--Wild black currant

ROSACEAE

Rosa carolina--Prairie rose

FABACEAE

Amphicarpa bracteata--Hog peanut

ACERACEAE

Acer negundo²--Boxelder

BALSAMINACEAE

Impatiens capensis--Jewelweed

RHAMNACEAE

Rhamnus cathartica¹--Common buckthorn

VITACEAE

Vitis riparia--Riverbank grape
Parthenocissus quinquefolia--Virginia creeper

LYTHRACEAE

Lythrum salicaria¹--Purple loosestrife

UMBELLIFERAE

Daucus carota¹--Queen Anne's lace
Angelica atropurpurea--Angelica

CORNACEAE

Cornus stolonifera--Red-osier dogwood
Cornus racemosa--Grey dogwood

CONVOLVULACEAE

Convolvulus arvensis¹--Field bindweed

LABIATAE

Glechoma hederacea¹--Creeping Charlie
Stachys palustris--Hedge-nettle

CAPRIFOLIACEAE

Viburnum opulus¹--European highbush-cranberry
Sambucus canadensis--Elderberry
Lonicera x bella¹--Hybrid honeysuckle

DIPSACACEAE

Dipsacus laciniatus¹--Cut-leaved teasel

CUCURBITACEAE

Echinocystis lobata--Wild cucumber

COMPOSITAE

Helianthus grosseserratus--Sawtooth sunflower
Rudbeckia laciniata--Green-headed coneflower
Bidens sp.--Beggars-ticks
Solidago altissima--Tall goldenrod
Aster pilosus--Frost aster
Eupatorium maculatum--Joe-Pye weed
Eupatorium perfoliatum--Boneset

Total number of plant species: 42

Number of alien, or non-native, plant species: 11 (26 percent)

This approximately 1.8-acre plant community area is part of the Pebble Creek floodplain-wetland complex and consists of fresh (wet) meadow and second growth, Southern wet to wet-mesic lowland hardwoods with small stands of Southern sedge meadow. Disturbances to the plant community area include dumping, past filling, selective cutting of trees, side casting of dredge spoil material, siltation and sedimentation due to stormwater runoff from adjacent lands, and water level changes due to past ditching and draining. No Federal- or State-designated Special Concern, Threatened, or Endangered species were observed during the field inspection.

¹ Alien or non-native plant species

² Co-dominant plant species

Plant Community Area No. 17

EQUISETACEAE

Equisetum arvense--Common horsetail

PINACEAE

Pinus strobus¹--White pine

Pinus sylvestris^{1,2}--Scotch pine

TYPHACEAE

Typha angustifolia--Narrow-leaved cat-tail

SPARGANIACEAE

Sparganium eurycarpum--Common burred

ALISMACEAE

Sagittaria latifolia--Common arrowhead

GRAMINEAE

Poa pratensis²--Kentucky bluegrass

Agropyron repens²--Quack grass

Agrostis stolonifera²--Redtop grass

Phalaris arundinacea^{2,3}--Reed canary grass

Leersia oryzoides--Rice cut grass

Panicum capillare--Witch grass

Echinochloa crusgalli²--Barnyard grass

Setaria sp.²--Foxtail

CYPERACEAE

Cyperus esculentus--Chufa

Eleocharis erythropoda--Red-root spike-rush

Scirpus validus--Soft-stemmed bulrush

Scirpus atrovirens--Green bulrush

Carex pellita--Woolly sedge

Carex trichocarpa--Hairy-fruited lake sedge

LEMNACEAE

Lemna minor--Lesser duckweed

JUNCACEAE

Juncus dudleyi--Dudley's rush

SALICACEAE

Populus deltoides--Cottonwood

Salix nigra--Black willow

Salix petiolaris--Petioled willow

URTICACEAE

Urtica dioica--Stinging nettle

Pilea pumila--Clearweed

POLYGONACEAE

Polygonum amphibium--Water smartweed

Polygonum lapathifolium--Smartweed

Polygonum persicaria²--Lady's thumb

SAXIFRAGACEAE

Ribes americanum--Wild black currant

ROSACEAE

Geum aleppicum--Yellow avens

Rubus strigosus--Red raspberry

EUPHORBIACEAE

Acalypha rhomboidea--Three-seeded mercury

ACERACEAE

Acer saccharinum--Silver maple

Acer negundo--Boxelder

BALSAMINACEAE

Impatiens capensis--Jewelweed

RHAMNACEAE

Rhamnus cathartica²--Common buckthorn

VITACEAE

Vitis riparia--Riverbank grape

ONAGRACEAE

Epilobium coloratum--Willow-herb

Oenothera biennis--Evening-primrose

UMBELLIFERAE

Daucus carota²--Queen Anne's lace

Cicuta bulbifera--Water-hemlock

CORNACEAE

Cornus stolonifera--Red-osier dogwood

ASCLEPIADACEAE

Asclepias incarnata--Marsh milkweed

Asclepias syriaca--Common milkweed

CONVOLVULACEAE

Convolvulus sepium--Hedge bindweed

VERBENACEAE

Verbena hastata--Blue vervain

LABIATAE

Glechoma hederacea²--Creeping Charlie

Prunella vulgaris--Selfheal

PLANTAGINACEAE

Plantago major²--Common plantain

CAPRIFOLIACEAE

Viburnum opulus²--European highbush-cranberry

Sambucus canadensis--Elderberry

Lonicera x bella²--Hybrid honeysuckle

COMPOSITAE

Rudbeckia laciniata--Green-headed coneflower

Bidens connata--Purple-stemmed tickseed

Bidens vulgata--Tall beggars-ticks

Ambrosia trifida--Giant ragweed

Ambrosia artemisiifolia--Common ragweed

Solidago altissima--Tall goldenrod

Solidago graminifolia--Grassleaf goldenrod

Aster novae-angliae--New England aster

Aster lucidulus--Swamp aster

Aster pilosus--Frost aster

Aster simplex--Marsh aster

Conyza canadensis--Horseweed

COMPOSITAE cont'

Eupatorium maculatum--Joe-Pye weedCirsium arvense²--Canada thistle

Total number of plant species: 68

Number of alien, or non-native, plant species: 15 (22 percent)

This approximately 0.7-acre plant community area is part of the Pebble Creek floodplain-wetland complex and consists of open water, shallow marsh, and fresh (wet) meadow. Disturbances to the plant community area include dumping, mowing, pond excavation, siltation and sedimentation due to stormwater runoff from adjacent lands, and water level changes due to past ditching and draining. No Federal- or State-designated Special Concern, Threatened, or Endangered species were observed during the field inspection.

¹ Planted tree species

² Alien or non-native plant species

³ Dominant plant species

Plant Community Area No. 18

PINACEAE

Picea abies^{1,2}--Norway spruce

GRAMINEAE

Bromus inermis¹--Smooth brome grass

Poa pratensis¹--Kentucky bluegrass

Agropyron repens¹--Quack grass

Phalaris arundinacea^{1,3}--Reed canary grass

Setaria faberi¹--Giant foxtail

CYPERACEAE

Scirpus atrovirens--Green bulrush

Scirpus pendulus--Red bulrush

Carex vulpinoidea--Fox sedge

Carex pellita--Woolly sedge

JUNCACEAE

Juncus dudleyi--Dudley's rush

SALICACEAE

Populus deltoides--Cottonwood

Salix bebbiana--Beaked willow

BETULACEAE

Alnus glutinosa¹--European alder

ULMACEAE

Ulmus americana--American elm

POLYGONACEAE

Rumex crispus¹--Curly dock

Polygonum amphibium--Water smartweed

SAXIFRAGACEAE

Ribes americanum--Wild black currant

ROSACEAE

Geum aleppicum--Yellow avens

OXALIDACEAE

Oxalis stricta--Common wood sorrel

EUPHORBIACEAE

Acalypha rhomboidea--Three-seeded mercury

ACERACEAE

Acer negundo--Boxelder

BALSAMINACEAE

Impatiens capensis--Jewelweed

RHAMNACEAE

Rhamnus cathartica¹--Common buckthorn

Rhamnus frangula¹--Glossy buckthorn

VITACEAE

Vitis riparia--Riverbank grape

Parthenocissus quinquefolia--Virginia creeper

MALVACEAE

Abutilon theophrasti¹--Velvet-leaf

LYTHRACEAE

Lythrum salicaria¹--Purple loosestrife

ONAGRACEAE

Epilobium coloratum--Willow-herb

UMBELLIFERAE

Daucus carota¹--Queen Anne's lace

Pastinaca sativa¹--Wild parsnip

CORNACEAE

Cornus stolonifera--Red-osier dogwood

OLEACEAE

Fraxinus pennsylvanica--Green ash

ASCLEPIADACEAE

Asclepias syriaca--Common milkweed

CONVOLVULACEAE

Convolvulus arvensis¹--Field bindweed

VERBENACEAE

Verbena urticifolia--White vervain

Verbena hastata--Blue vervain

SOLANACEAE

Solanum dulcamara¹--Deadly nightshade

PLANTAGINACEAE

Plantago major¹--Common plantain

Plantago lanceolata¹--English plantain

CAPRIFOLIACEAE

Sambucus canadensis--Elderberry

Lonicera x bella¹--Hybrid honeysuckle

COMPOSITAE

Helianthus grosseserratus--Sawtooth sunflower

Bidens connata--Purple-stemmed tickseed

Bidens vulgata--Tall beggars-ticks

Ambrosia trifida--Giant ragweed

Ambrosia artemisiifolia--Common ragweed

Solidago altissima--Tall goldenrod

Solidago graminifolia--Grassleaf goldenrod

Aster lucidulus--Swamp aster

Aster simplex--Marsh aster

Cirsium arvense¹--Canada thistle

Sonchus arvensis¹--Sow thistle

Lactuca serriola¹--Prickly wild lettuce

Total number of plant species: 55

Number of alien, or non-native, plant species: 22 (40 percent)

This approximately 0.3-acre plant community area is part of a larger wetland complex and consists of fresh (wet) meadow. Disturbances to the plant community area include past agricultural land management activities, dumping, the ad hoc establishment of footpaths, mowing, and siltation and sedimentation due to stormwater runoff from adjacent lands. No Federal- or State-designated Special Concern, Threatened, or Endangered species were observed during the field inspection.

¹ Alien or non-native plant species

² Planted tree species

³ Dominant plant species

Plant Community Area No. 19

TYPHACEAE

Typha latifolia¹--Broad-leaved cat-tail

GRAMINEAE

Bromus inermis²--Smooth brome grass
Agrostis stolonifera²--Redtop grass
Phalaris arundinacea^{1,2}--Reed canary grass
Leersia oryzoides--Rice cut grass
Panicum capillare--Witch grass
Echinochloa crusgalli²--Barnyard grass
Setaria sp.²--Foxtail

CYPERACEAE

Cyperus esculentus--Chufa
Scirpus atrovirens--Green bulrush

JUNCACEAE

Juncus dudleyi--Dudley's rush

SALICACEAE

Populus deltoides--Cottonwood
Salix nigra--Black willow
Salix interior¹--Sandbar willow

URTICACEAE

Urtica dioica--Stinging nettle

POLYGONACEAE

Rumex crispus²--Curly dock
Polygonum persicaria²--Lady's thumb

CHENOPODIACEAE

Chenopodium album²--Lambs quarters

PORTULACACEAE

Portulaca oleracea²--Purslane

CRUCIFERAE

Barbarea vulgaris²--Yellow rocket

MALVACEAE

Abutilon theophrasti²--Velvet-leaf

ONAGRACEAE

Epilobium coloratum--Willow-herb

UMBELLIFERAE

Daucus carota²--Queen Anne's lace

CAPRIFOLIACEAE

Lonicera maackii²--Amur honeysuckle

COMPOSITAE

Helianthus grosseserratus--Sawtooth sunflower
Bidens sp.--Beggars-ticks
Ambrosia trifida--Giant ragweed
Solidago altissima--Tall goldenrod
Solidago graminifolia--Grassleaf goldenrod
Aster puniceus--Red-stemmed aster
Aster lateriflorus--Calico aster

COMPOSITAE cont'

Aster simplex--Marsh asterErigeron strigosus--Daisy fleabaneCirsium arvense²--Canada thistle

Total number of plant species: 34

Number of alien, or non-native, plant species: 14 (41 percent)

This approximately 1.3-acre plant community area is part of a larger wetland complex and consists of shallow marsh, fresh (wet) meadow, and shrub-carr (willow thicket). Disturbances to the plant community area include agricultural land management activities including plowing along the wetland edge, dumping, the ad hoc establishment of footpaths, side casting of dredge spoil material, siltation and sedimentation due to stormwater runoff from adjacent lands, and water level changes due to past ditching and draining. No Federal- or State-designated Special Concern, Threatened, or Endangered species were observed during the field inspection.

¹ Co-dominant plant species

² Alien or non-native plant species

Plant Community Area No. 20

GRAMINEAE

Setaria faberi¹--Giant foxtail
Zea mays¹--Domestic corn

CYPERACEAE

Cyperus esulentus--Chufa

CRUCIFERAE

Barbarea vulgaris¹--Yellow rocket

FABACEAE

Trifolium repens¹--White clover

COMPOSITAE

Cirsium arvense¹--Canada thistle
Taraxacum officinale¹--Common dandelion

Total number of plant species: 7

Number of alien, or non-native, plant species: 6 (86 percent)

This approximately 0.2-acre plant community area is part of a larger wetland complex and consists of atypical (farmed) wetland. Disturbances to the plant community area include agricultural land management activities including plowing and siltation and sedimentation due to stormwater runoff from adjacent lands. No Federal- or State-designated Special Concern, Threatened, or Endangered species were observed during the field inspection.

¹ Alien or non-native plant species

Plant Community Area No. 21

GRAMINEAE

Setaria faberi¹--Giant foxtail
Zea mays¹--Domestic corn

POLYGONACEAE

Rumex crispus¹--Curly dock

CRUCIFERAE

Barbarea vulgaris¹--Yellow rocket

UMBELLIFERAE

Daucus carota¹--Queen Anne's lace

Total number of plant species: 5

Number of alien, or non-native, plant species: 5 (100 percent)

This approximately 0.4-acre plant community area is part of a larger wetland complex and consists of atypical (farmed) wetland. Disturbances to the plant community area include agricultural land management activities including plowing and siltation and sedimentation due to stormwater runoff from adjacent lands. No Federal- or State-designated Special Concern, Threatened, or Endangered species were observed during the field inspection.

¹ Alien or non-native plant species

Plant Community Area No. 22

EQUISETACEAE

Equisetum arvense--Common horsetail
Equisetum hyemale--Scouring-rush

TYPHACEAE

Typha latifolia¹--Broad-leaved cat-tail

GRAMINEAE

Poa palustris--Marsh bluegrass
Agropyron repens²--Quack grass
Phalaris arundinacea^{1,2}--Reed canary grass

CYPERACEAE

Scirpus atrovirens--Green bulrush
Carex vulpinoidea--Fox sedge
Carex pellita--Woolly sedge
Carex stricta¹--Tussock sedge
Carex lacustris--Lake sedge

SALICACEAE

Populus tremuloides--Quaking aspen
Populus deltoides--Cottonwood
Salix petiolaris--Petioled willow

CRUCIFERAE

Nasturtium officinale²--Water-cress

ROSACEAE

Rosa multiflora²--Multiflora rose

ACERACEAE

Acer negundo--Boxelder

BALSAMINACEAE

Impatiens capensis--Jewelweed

RHAMNACEAE

Rhamnus cathartica²--Common buckthorn
Rhamnus frangula²--Glossy buckthorn

VITACEAE

Vitis riparia--Riverbank grape

ONAGRACEAE

Epilobium coloratum--Willow-herb

UMBELLIFERAE

Daucus carota²--Queen Anne's lace
Angelica atropurpurea--Angelica

CORNACEAE

Cornus stolonifera--Red-osier dogwood
Cornus racemosa--Grey dogwood

OLEACEAE

Fraxinus pennsylvanica--Green ash

ASCLEPIADACEAE

Asclepias syriaca--Common milkweed

VERBENACEAE

Verbena hastata--Blue vervain

LABIATAE

Monarda fistulosa--Wild bergamot

SOLANACEAE

Solanum dulcamara²--Deadly nightshade

CAPRIFOLIACEAE

Viburnum opulus²--European highbush-cranberryViburnum lentago--Nannyberry

COMPOSITAE

Helianthus grosseserratus--Sawtooth sunflowerSolidago gigantea--Giant goldenrodSolidago altissima¹--Tall goldenrodSolidago graminifolia--Grassleaf goldenrodAster puniceus--Red-stemmed asterAster simplex--Marsh asterEupatorium maculatum--Joe-Pye weedEupatorium perfoliatum--BonesetCirsium vulgare²--Bull thistleCirsium muticum--Swamp thistle

Total number of plant species: 43

Number of alien, or non-native, plant species: 10 (23 percent)

This approximately 1.9-acre plant community area is part of a larger wetland complex and consists of shallow marsh, Southern sedge meadow, and fresh (wet) meadow. Disturbances to the plant community area include past filling, siltation and sedimentation due to stormwater runoff from adjacent lands, and water level changes due to past ditching and draining. No Federal- or State-designated Special Concern, Threatened, or Endangered species were observed during the field inspection.

¹ Co-dominant plant species² Alien or non-native plant species

Plant Community Area No. 23

GRAMINEAE

Poa pratensis¹--Kentucky bluegrass
Agrostis stolonifera¹--Redtop grass
Phalaris arundinacea^{1,2}--Reed canary grass

CYPERACEAE

Scirpus atrovirens--Green bulrush

SALICACEAE

Salix nigra--Black willow

JUGLANDACEAE

Juglans nigra--Black walnut

ULMACEAE

Celtis occidentalis--Hackberry

URTICACEAE

Urtica dioica--Stinging nettle

POLYGONACEAE

Polygonum persicaria¹--Lady's thumb

CARYOPHYLLACEAE

Myosoton aquaticum¹--Water chickweed

RANUNCULACEAE

Ranunculus sceleratus--Cursed crowfoot
Thalictrum dasycarpum--Tall meadow rue

CRUCIFERAE

Hesperis matronalis¹--Dames rocket
Alliaria officinalis¹--Garlic-mustard

SAXIFRAGACEAE

Ribes americanum--Wild black currant

ROSACEAE

Rubus occidentalis--Black raspberry

EUPHORBIACEAE

Acalypha rhomboidea--Three-seeded mercury

ACERACEAE

Acer negundo²--Boxelder

BALSAMINACEAE

Impatiens capensis--Jewelweed

RHAMNACEAE

Rhamnus cathartica¹--Common buckthorn

VITACEAE

Vitis riparia--Riverbank grape
Parthenocissus quinquefolia--Virginia creeper

VIOLACEAE

Viola sororia--Woolly blue violet

UMBELLIFERAE

Daucus carota¹--Queen Anne's lace
Angelica atropurpurea--Angelica

OLEACEAE

Fraxinus pennsylvanica²--Green ash

CONVOLVULACEAE

Convolvulus sepium--Hedge bindweed

VERBENACEAE

Verbena hastata--Blue vervain

LABIATAE

Nepeta cataria¹--Catnip
Glechoma hederacea¹--Creeping Charlie
Galeopsis tetrahit¹--Hemp nettle
Leonurus cardiaca¹--Motherwort

SOLANACEAE

Solanum dulcamara¹--Deadly nightshade

CAPRIFOLIACEAE

Viburnum opulus¹--European highbush-cranberry
Viburnum lantana¹--Wayfaring tree
Viburnum rafinesquianum--Downy arrowwood

CUCURBITACEAE

Echinocystis lobata--Wild cucumber

COMPOSITAE

Helianthus strumosus--Pale-leaved wood sunflower
Helianthus grosseserratus--Sawtooth sunflower
Bidens sp.--Beggars-ticks
Ambrosia trifida--Giant ragweed
Solidago gigantea--Giant goldenrod
Solidago altissima--Tall goldenrod
Aster lucidulus--Swamp aster
Arctium minus¹--Common burdock
Cirsium arvense¹--Canada thistle

Total number of plant species: 46

Number of alien, or non-native, plant species: 18 (39 percent)

This approximately 0.3-acre plant community area is part of a larger wetland complex and consists of fresh (wet) meadow and second growth, Southern wet to wet-mesic lowland hardwoods. Disturbances to the plant community area include agricultural land management activities including plowing along the wetland edge, past filling, selective cutting of trees, siltation and sedimentation due to stormwater runoff from adjacent lands, and water level changes due to past ditching and draining. No Federal- or State-designated Special Concern, Threatened, or Endangered species were observed during the field inspection.

¹ Alien or non-native plant species

² Co-dominant plant species

Plant Community Area No. 24

GRAMINEAE

Glyceria striata--Fowl manna grass
Phalaris arundinacea¹--Reed canary grass

CYPERACEAE

Cyperus esculentus--Chufa
Carex vulpinoidea--Fox sedge
Carex hebbii--Bebb's oval sedge

SALICACEAE

Populus deltoides²--Cottonwood
Salix nigra--Black willow

JUGLANDACEAE

Juglans nigra--Black walnut

FAGACEAE

Quercus bicolor--Swamp white oak

ULMACEAE

Ulmus americana²--American elm

POLYGONACEAE

Polygonum persicaria¹--Lady's thumb

SAXIFRAGACEAE

Ribes americanum--Wild black currant

ROSACEAE

Geum canadense--White avens
Geum aleppicum--Yellow avens
Prunus virginiana--Chokecherry

OXALIDACEAE

Oxalis stricta--Common wood sorrel

ANACARDIACEAE

Rhus radicans--Poison ivy

ACERACEAE

Acer negundo²--Boxelder

RHAMNACEAE

Rhamnus cathartica¹--Common buckthorn
Rhamnus frangula¹--Glossy buckthorn

VITACEAE

Vitis riparia--Riverbank grape
Parthenocissus quinquefolia--Virginia creeper

CORNACEAE

Cornus racemosa--Grey dogwood

LABIATAE

Glechoma hederacea¹--Creeping Charlie

PLANTAGINACEAE

Plantago lanceolata¹--English plantain

CAPRIFOLIACEAE

Sambucus canadensis--Elderberry

COMPOSITAE

Ambrosia trifida--Giant ragweed
Solidago altissima--Tall goldenrod
Solidago graminifolia--Grassleaf goldenrod
Aster pilosus--Frost aster
Aster lateriflorus--Calico aster
Cirsium vulgare¹--Bull thistle
Cirsium arvense¹--Canada thistle
Taraxacum officinale¹--Common dandelion

Total number of plant species: 34

Number of alien, or non-native, plant species: 9 (26 percent)

This approximately 0.2-acre plant community area consists of second growth, Southern wet to wet-mesic lowland hardwoods. Disturbances to the plant community area include past filling, mowing along the wetland edge, selective cutting of trees, and siltation and sedimentation due to stormwater runoff from adjacent lands. No Federal- or State-designated Special Concern, Threatened, or Endangered species were observed during the field inspection.

¹ Alien or non-native plant species

² Co-dominant plant species

Plant Community Area No. 25

GRAMINEAE

Poa pratensis¹--Kentucky bluegrass
Phalaris arundinacea^{1,2}--Reed canary grass
Panicum dichotomiflorum--Knee grass
Setaria faberi¹--Giant foxtail

CYPERACEAE

Carex bebbii--Bebb's oval sedge
Carex pellita--Woolly sedge

SALICACEAE

Populus deltoides²--Cottonwood
Salix nigra--Black willow
Salix discolor--Pussy willow

ULMACEAE

Ulmus americana--American elm

POLYGONACEAE

Polygonum amphibium--Water smartweed

CHENOPODIACEAE

Chenopodium album¹--Lambs quarters

SAXIFRAGACEAE

Ribes americanum--Wild black currant

ROSACEAE

Geum canadense--White avens
Geum aleppicum--Yellow avens
Rubus occidentalis--Black raspberry

ACERACEAE

Acer negundo--Boxelder

RHAMNACEAE

Rhamnus cathartica¹--Common buckthorn
Rhamnus frangula¹--Glossy buckthorn

VITACEAE

Vitis riparia--Riverbank grape
Parthenocissus quinquefolia--Virginia creeper

UMBELLIFERAE

Daucus carota¹--Queen Anne's lace

LABIATAE

Glechoma hederacea¹--Creeping Charlie

SOLANACEAE

Solanum dulcamara¹--Deadly nightshade

CAPRIFOLIACEAE

Viburnum opulus¹--European highbush-cranberry
Sambucus canadensis--Elderberry

COMPOSITAE

Ambrosia trifida--Giant ragweed
Solidago gigantea--Giant goldenrod

COMPOSITAE cont'

Solidago altissima--Tall goldenrodArctium minus¹--Common burdockCirsium arvense¹--Canada thistle

Total number of plant species: 31

Number of alien, or non-native, plant species: 12 (39 percent)

This approximately 0.1-acre wetland plant community area consists of fresh (wet) meadow and second growth, Southern wet to wet-mesic lowland hardwoods. Disturbances to the plant community area include dumping, past filling, mowing along the wetland edge, selective cutting of trees, siltation and sedimentation due to stormwater runoff from adjacent lands, and water level changes due to past ditching and draining. No Federal- or State-designated Special Concern, Threatened, or Endangered species were observed during the field inspection.

¹ Alien or non-native plant species

² Co-dominant plant species

Plant Community Area No. 26

TYPHACEAE

Typha latifolia¹--Broad-leaved cat-tail
Typha angustifolia--Narrow-leaved cat-tail

GRAMINEAE

Poa pratensis²--Kentucky bluegrass
Phalaris arundinacea^{1,2}--Reed canary grass

CYPERACEAE

Carex pellita--Woolly sedge

POLYGONACEAE

Polygonum amphibium--Water smartweed

ACERACEAE

Acer negundo--Boxelder

VITACEAE

Parthenocissus quinquefolia--Virginia creeper

LYTHRACEAE

Lythrum salicaria²--Purple loosestrife

ASCLEPIADACEAE

Asclepias syriaca--Common milkweed

VERBENACEAE

Verbena urticifolia--White vervain

SCROPHULARIACEAE

Linaria vulgaris²--Butter-and-eggs

COMPOSITAE

Solidago altissima--Tall goldenrod
Solidago graminifolia--Grassleaf goldenrod
Aster pilosus--Frost aster
Cirsium arvense²--Canada thistle
Sonchus arvensis²--Sow thistle

Total number of plant species: 17

Number of alien, or non-native, plant species: 6 (35 percent)

This approximately 0.2-acre wetland plant community area consists of shallow marsh and fresh (wet) meadow. Disturbances to the plant community area include filling, mowing, and siltation and sedimentation due to stormwater runoff from adjacent lands. No Federal- or State-designated Special Concern, Threatened, or Endangered species were observed during the field inspection.

¹ Co-dominant plant species

² Alien or non-native plant species

Plant Community Area No. 27

TYPHACEAE

Typha latifolia¹--Broad-leaved cat-tail
Typha angustifolia--Narrow-leaved cat-tail

GRAMINEAE

Poa pratensis²--Kentucky bluegrass
Hordeum jubatum²--Squirreltail
Phalaris arundinacea²--Reed canary grass

CYPERACEAE

Cyperus esculentus--Chufa
Carex pellita--Woolly sedge

SALICACEAE

Populus deltoides¹--Cottonwood
Salix nigra--Black willow
Salix interior¹--Sandbar willow

JUGLANDACEAE

Juglans nigra--Black walnut

ULMACEAE

Ulmus americana--American elm

URTICACEAE

Pilea pumila--Clearweed

POLYGONACEAE

Rumex crispus²--Curly dock
Polygonum aviculare²--Prostrate knotweed
Polygonum amphibium--Water smartweed
Polygonum persicaria²--Lady's thumb

CRUCIFERAE

Alliaria officinalis²--Garlic-mustard

ROSACEAE

Geum canadense--White avens
Geum aleppicum--Yellow avens
Rubus occidentalis--Black raspberry

ANACARDIACEAE

Rhus radicans--Poison ivy

ACERACEAE

Acer saccharinum--Silver maple
Acer negundo--Boxelder

BALSAMINACEAE

Impatiens capensis--Jewelweed

RHAMNACEAE

Rhamnus cathartica²--Common buckthorn

VITACEAE

Vitis riparia--Riverbank grape
Parthenocissus quinquefolia--Virginia creeper

UMBELLIFERAE

Daucus carota²--Queen Anne's lace

APOCYNACEAE

Apocynum androsaemifolium--Dogbane

BORAGINACEAE

Hackelia virginiana--Stickseed

VERBENACEAE

Verbena urticifolia--White vervain

LABIATAE

Nepeta cataria²--CatnipLycopus americanus--Cutleaf bugleweed

SOLANACEAE

Solanum dulcamara²--Deadly nightshade

SCROPHULARIACEAE

Linaria vulgaris²--Butter-and-eggs

CAPRIFOLIACEAE

Lonicera X bella²--Hybrid honeysuckle

CUCURBITACEAE

Echinocystis lobata--Wild cucumber

COMPOSITAE

Ambrosia artemisiifolia--Common ragweedChrysanthemum leucanthemum²--Ox-eye daisySolidago altissima--Tall goldenrodAster lateriflorus--Calico asterArctium minus²--Common burdockCirsium vulgare²--Bull thistleCirsium arvense²--Canada thistleLactuca serriola²--Prickly wild lettuce

Total number of plant species: 46

Number of alien, or non-native, plant species: 18 (39 percent)

This approximately 1.0-acre plant community area is part of a larger wetland complex and consists of shallow marsh, shrub-carr (willow thicket), and second growth, Southern wet to wet-mesic lowland hardwoods. Disturbances to the plant community area include filling, mowing, selective cutting of trees, siltation and sedimentation due to stormwater runoff from adjacent lands, and water level changes due to past ditching and draining. No Federal- or State-designated Special Concern, Threatened, or Endangered species were observed during the field inspection.

¹ Co-dominant plant species² Alien or non-native plant species

Plant Community Area No. 28

TYPHACEAE

Typha angustifolia¹--Narrow-leaved cat-tail

GRAMINEAE

Poa pratensis²--Kentucky bluegrassAgropyron repens²--Quack grassHordeum jubatum²--SquirreltailEchinochloa crusgalli²--Barnyard grassSetaria sp.²--Foxtail

POLYGONACEAE

Polygonum aviculare²--Prostrate knotweedPolygonum persicaria²--Lady's thumb

CRUCIFERAE

Barbarea vulgaris²--Yellow rocket

ONAGRACEAE

Epilobium coloratum--Willow-herb

PLANTAGINACEAE

Plantago major²--Common plantain

COMPOSITAE

Ambrosia artemisiifolia--Common ragweedCirsium vulgare²--Bull thistleCirsium arvense²--Canada thistle

Total number of plant species: 14

Number of alien, or non-native, plant species: 11 (79 percent)

This approximately 0.1-acre wetland plant community area consists of shallow marsh. Disturbances to the plant community area include mowing, siltation and sedimentation due to stormwater runoff from adjacent lands, and water level changes due to past ditching and draining. No Federal- or State-designated Special Concern, Threatened, or Endangered species were observed during the field inspection.

¹ Dominant plant species² Alien or non-native plant species

Plant Community Area No. 29

TYPHACEAE

Typha angustifolia--Narrow-leaved cat-tail

GRAMINEAE

Phalaris arundinacea¹--Reed canary grassLeersia oryzoides--Rice cut grass

SALICACEAE

Salix nigra--Black willow

JUGLANDACEAE

Juglans nigra--Black walnut

URTICACEAE

Urtica dioica--Stinging nettle

POLYGONACEAE

Polygonum amphibium--Water smartweedPolygonum persicaria¹--Lady's thumb

RANUNCULACEAE

Thalictrum dasycarpum--Tall meadow rue

SAXIFRAGACEAE

Ribes americanum--Wild black currant

ROSACEAE

Geum canadense--White avensRubus occidentalis--Black raspberryRosa palustris--Swamp roseRosa sp.--Wild rosePrunus serotina--Black cherry

ACERACEAE

Acer saccharinum--Silver mapleAcer negundo²--Boxelder

BALSAMINACEAE

Impatiens capensis--Jewelweed

RHAMNACEAE

Rhamnus cathartica¹--Common buckthorn

VITACEAE

Vitis riparia--Riverbank grapeParthenocissus quinquefolia--Virginia creeper

OLEACEAE

Fraxinus pennsylvanica--Green ash

CONVOLVULACEAE

Convolvulus sepium--Hedge bindweed

SOLANACEAE

Solanum dulcamara¹--Deadly nightshade

CAPRIFOLIACEAE

Viburnum opulus¹--European highbush-cranberryViburnum lentago--Nannyberry

CAPRIFOLIACEAE cont'

Sambucus canadensis--ElderberryLonicera x bella¹--Hybrid honeysuckle

CUCURBITACEAE

Echinocystis lobata--Wild cucumber

COMPOSITAE

Helianthus tuberosus--Jerusalem artichokeBidens vulgata--Tall beggars-ticksAmbrosia trifida--Giant ragweedSolidago gigantea--Giant goldenrodTaraxacum officinale¹--Common dandelionSonchus arvensis¹--Sow thistle

Total number of plant species: 35

Number of alien, or non-native, plant species: 8 (23 percent)

This approximately 0.1-acre plant community area is part of a larger wetland complex and consists of second growth, Southern wet to wet-mesic lowland hardwoods. Disturbances to the plant community area include filling, mowing along the wetland edge, selective cutting of trees, siltation and sedimentation due to stormwater runoff from adjacent lands, and water level changes due to past ditching, draining, and stream channel realignment. No Federal- or State-designated Special Concern, Threatened, or Endangered species were observed during the field inspection.

¹ Alien or non-native plant species² Co-dominant plant species

Plant Community Area No. 30

TYPHACEAE

Typha angustifolia--Narrow-leaved cat-tail

ALISMATACEAE

Alisma plantago-aquatica--Water plantain

GRAMINEAE

Phragmites australis¹--Tall reed grassHordeum jubatum²--SquirreltailPhalaris arundinacea²--Reed canary grassEchinochloa crusgalli²--Barnyard grass

CYPERACEAE

Eleocharis erythropoda--Red-root spike-rushScirpus validus¹--Soft-stemmed bulrush

JUNCACEAE

Juncus nodosus--Joint rush

SALICACEAE

Populus deltoides--CottonwoodSalix nigra--Black willowSalix petiolaris--Pettioled willow

POLYGONACEAE

Rumex crispus²--Curly dockPolygonum persicaria²--Lady's thumb

COMPOSITAE

Bidens vulgata--Tall beggars-ticksAmbrosia trifida--Giant ragweedAmbrosia artemisiifolia--Common ragweedSolidago altissima--Tall goldenrodSolidago graminifolia--Grassleaf goldenrodAster pilosus--Frost aster

Total number of plant species: 20

Number of alien, or non-native, plant species: 5 (25 percent)

This approximately 0.1-acre plant community area consists of a constructed open water detention pond with shallow marsh and fresh (wet) meadow along the edge. Disturbances to the plant community area include pond excavation, side casting of dredge spoil material, and siltation and sedimentation due to stormwater runoff from adjacent lands. No Federal- or State-designated Special Concern, Threatened, or Endangered species were observed during the field inspection.

¹ Co-dominant plant species² Alien or non-native plant species

Plant Community Area No. 31

CUPRESSACEAE

Thuja occidentalis¹--White cedar

GRAMINEAE

Elymus villosus--Silky wild rye

Elymus virginicus--Virginia wild rye

Phalaris arundinacea²--Reed canary grass

Leersia oryzoides--Rice cut grass

CYPERACEAE

Carex grisea--Wood gray sedge

ARACEAE

Arisaema triphyllum--Jack-in-the-pulpit

LILIACEAE

Smilacina racemosa--Solomons plume

Smilax herbacea--Carrion flower

SALICACEAE

Populus deltoides--Cottonwood

JUGLANDACEAE

Juglans nigra--Black walnut

FAGACEAE

Quercus bicolor--Swamp white oak

ULMACEAE

Ulmus americana--American elm

MORACEAE

Morus alba²--White mulberry

RANUNCULACEAE

Ranunculus septentrionalis--Swamp buttercup

Thalictrum dasycarpum--Tall meadow rue

PAPAVERACEAE

Sanguinaria canadensis--Bloodroot

CRUCIFERAE

Hesperis matronalis²--Dames rocket

Alliaria officinalis²--Garlic-mustard

SAXIFRAGACEAE

Ribes americanum--Wild black currant

ROSACEAE

Geum canadense--White avens

Rubus occidentalis--Black raspberry

Rosa multiflora²--Multiflora rose

Prunus serotina--Black cherry

Crataegus sp.--Hawthorn

FABACEAE

Amphicarpa bracteata--Hog peanut

OXALIDACEAE

Oxalis stricta--Common wood sorrel

EUPHORBIACEAE
Acalypha rhomboidea--Three-seeded mercury

CELASTRACEAE
Euonymus atropurpureus--Burning bush

ACERACEAE
Acer negundo³--Boxelder

BALSAMINACEAE
Impatiens capensis--Jewelweed

RHAMNACEAE
Rhamnus cathartica²--Common buckthorn

VITACEAE
Vitis riparia--Riverbank grape
Parthenocissus quinquefolia--Virginia creeper

ONAGRACEAE
Circaea lutetiana--Enchanter's nightshade

UMBELLIFERAE
Sanicula marilandica--Black snakeroot
Heracleum lanatum--Cow parsnip

OLEACEAE
Fraxinus pennsylvanica--Green ash

BORAGINACEAE
Hackelia virginiana--Stickseed

VERBENACEAE
Verbena urticifolia--White vervain

LABIATAE
Leonurus cardiaca²--Motherwort

CAPRIFOLIACEAE
Sambucus canadensis--Elderberry
Lonicera X bella²--Hybrid honeysuckle

CUCURBITACEAE
Echinocystis lobata--Wild cucumber

LOBELIACEAE
Lobelia siphilitica--Great blue lobelia

COMPOSITAE
Helianthus strumosus--Pale-leaved wood sunflower
Bidens vulgata--Tall beggars-ticks
Ambrosia trifida--Giant ragweed
Solidago altissima--Tall goldenrod
Aster lateriflorus--Calico aster
Arctium minus²--Common burdock
Cirsium arvense²--Canada thistle
Taraxacum officinale²--Common dandelion
Sonchus arvensis²--Sow thistle

Total number of plant species: 54

Number of alien, or non-native, plant species: 12 (22 percent)

This approximately 0.2-acre plant community area is part of a larger wetland complex and consists of second growth, Southern wet to wet-mesic lowland hardwoods. Disturbances to the plant community area include mowing along the wetland edge, selective cutting of trees, siltation and sedimentation due to stormwater runoff from adjacent lands, and water level changes due to past ditching and draining. No Federal- or State-designated Special Concern, Threatened, or Endangered species were observed during the field inspection.

¹ Planted tree species

² Alien or non-native plant species

³ Dominant plant species

Plant Community Area No. 32

TYPHACEAE

Typha latifolia¹--Broad-leaved cat-tail
Typha angustifolia--Narrow-leaved cat-tail

GRAMINEAE

Bromus inermis²--Smooth brome grass
Poa pratensis²--Kentucky bluegrass
Agrostis stolonifera²--Redtop grass
Phalaris arundinacea^{1,2}--Reed canary grass

Total number of plant species: 6

Number of alien, or non-native, plant species: 4 (67 percent)

This approximately 0.1-acre plant community area is part of a larger wetland complex and consists of shallow marsh and fresh (wet) meadow. Disturbances to the plant community area include mowing, side casting of dredge spoil material, siltation and sedimentation due to stormwater runoff from adjacent lands, and water level changes due to past ditching and draining. No Federal- or State-designated Special Concern, Threatened, or Endangered species were observed during the field inspection.

¹ Co-dominant plant species

² Alien or non-native plant species

Proposed Waukesha West Bypass
Sections 5, 6, 7, 8 and 17, T06N-R19E
Sections 29, 30, 31, and 32, T07N-R19E
City and Town of Waukesha, and City of Pewaukee, Waukesha County

Legend

Project Area

Primary Environmental Corridor

Secondary Environmental Corridor

Isolated Natural Resource Area

Natural Area

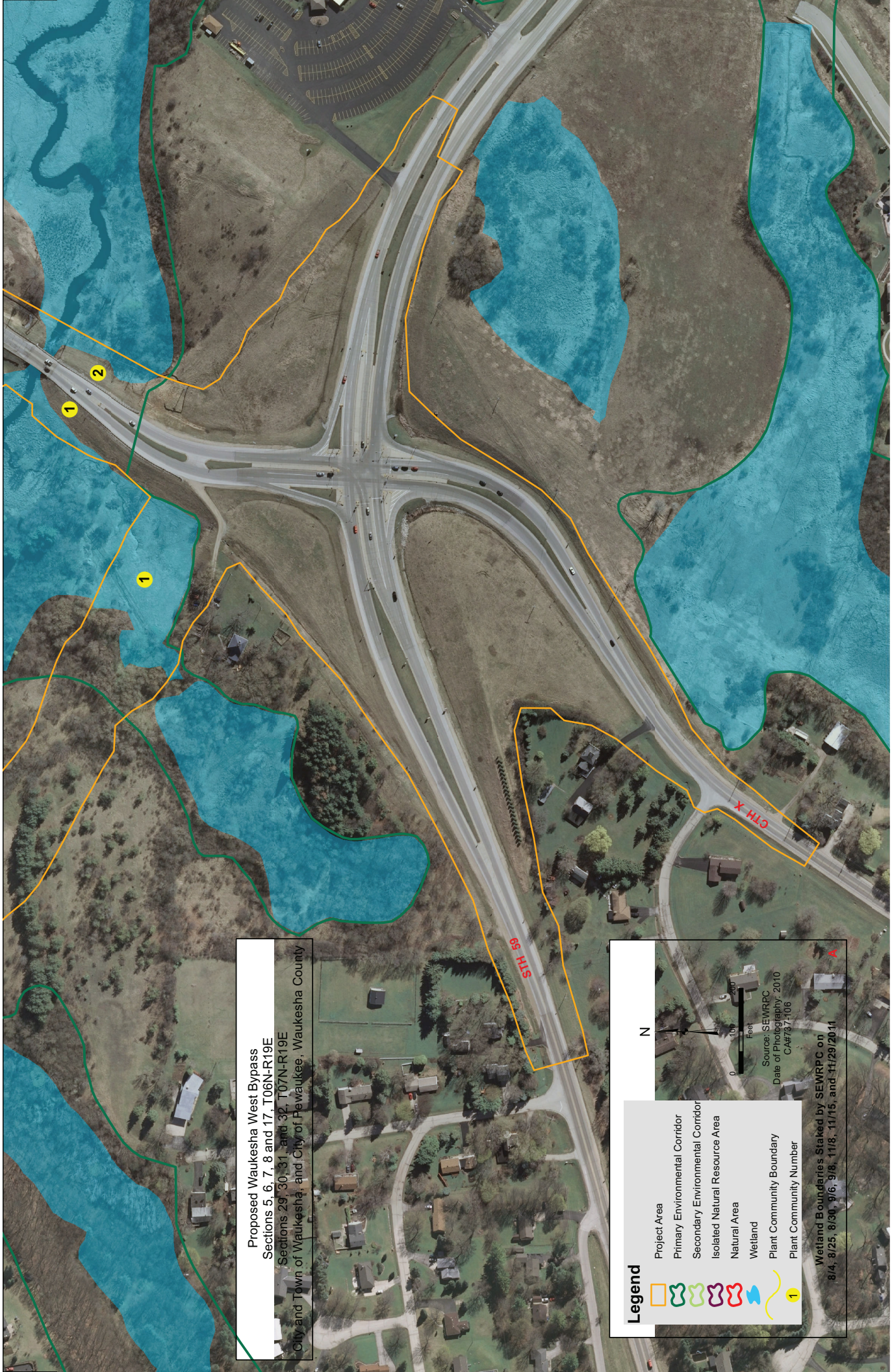
Wetland

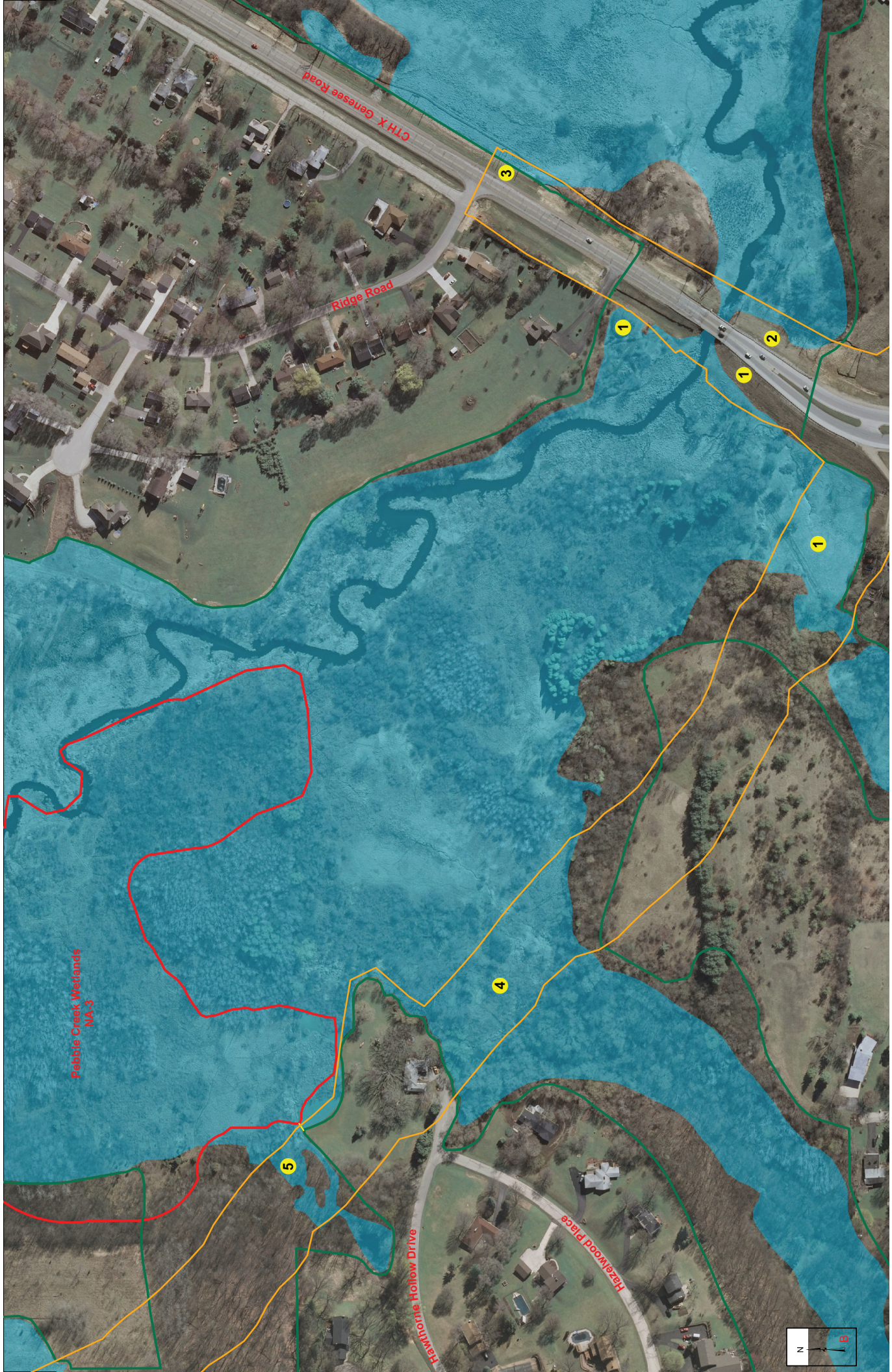
Plant Community Boundary

Plant Community Number

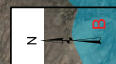
Source: SEWRPC
Date of Photography: 2010
CA4737-106

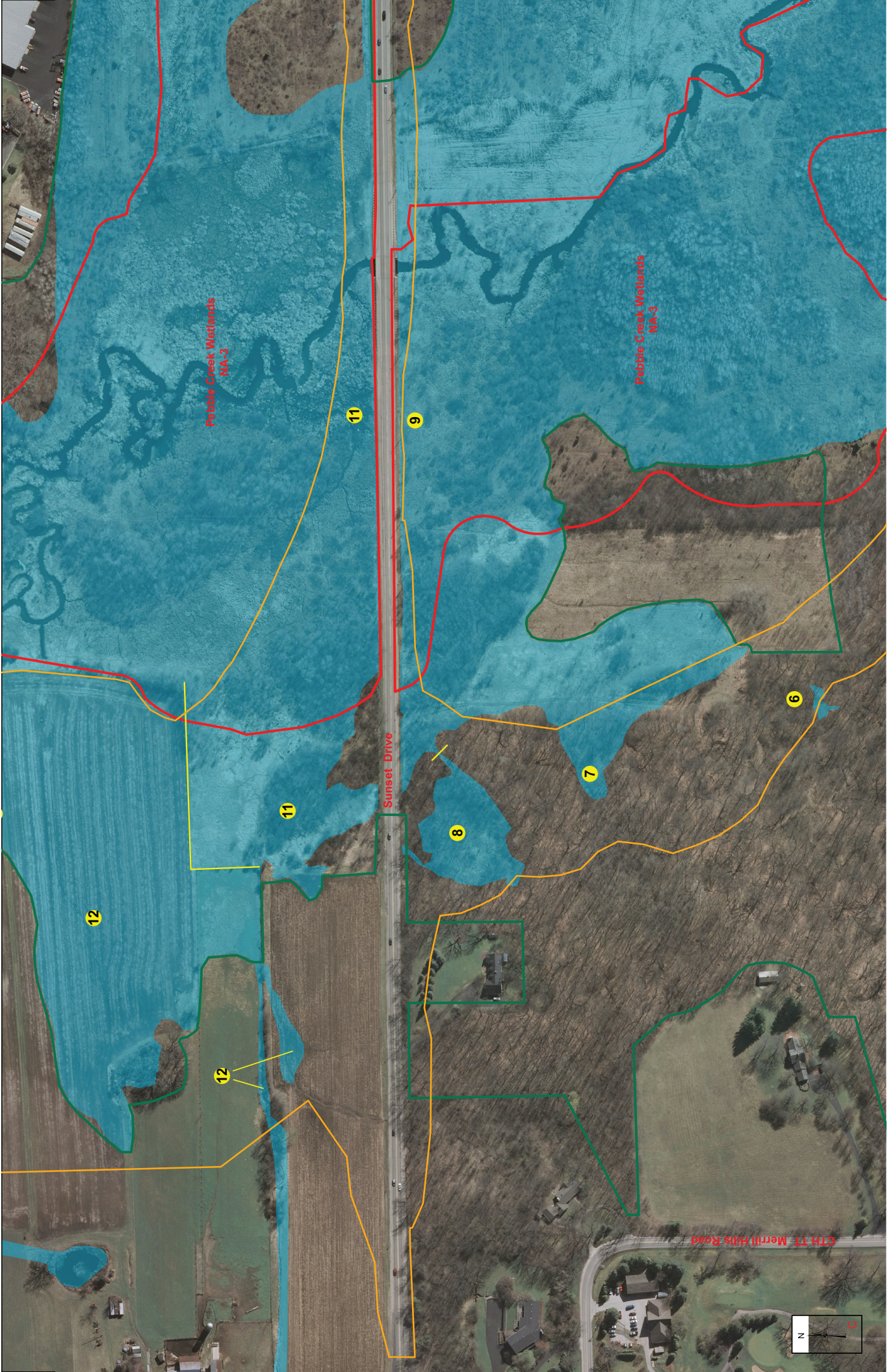
Wetland Boundaries Staked by SEWRPC on
8/4, 8/25, 9/6, 9/8, 11/8, 11/15, and 11/29/2011





Pawnee Creek Wetlands
NA-3

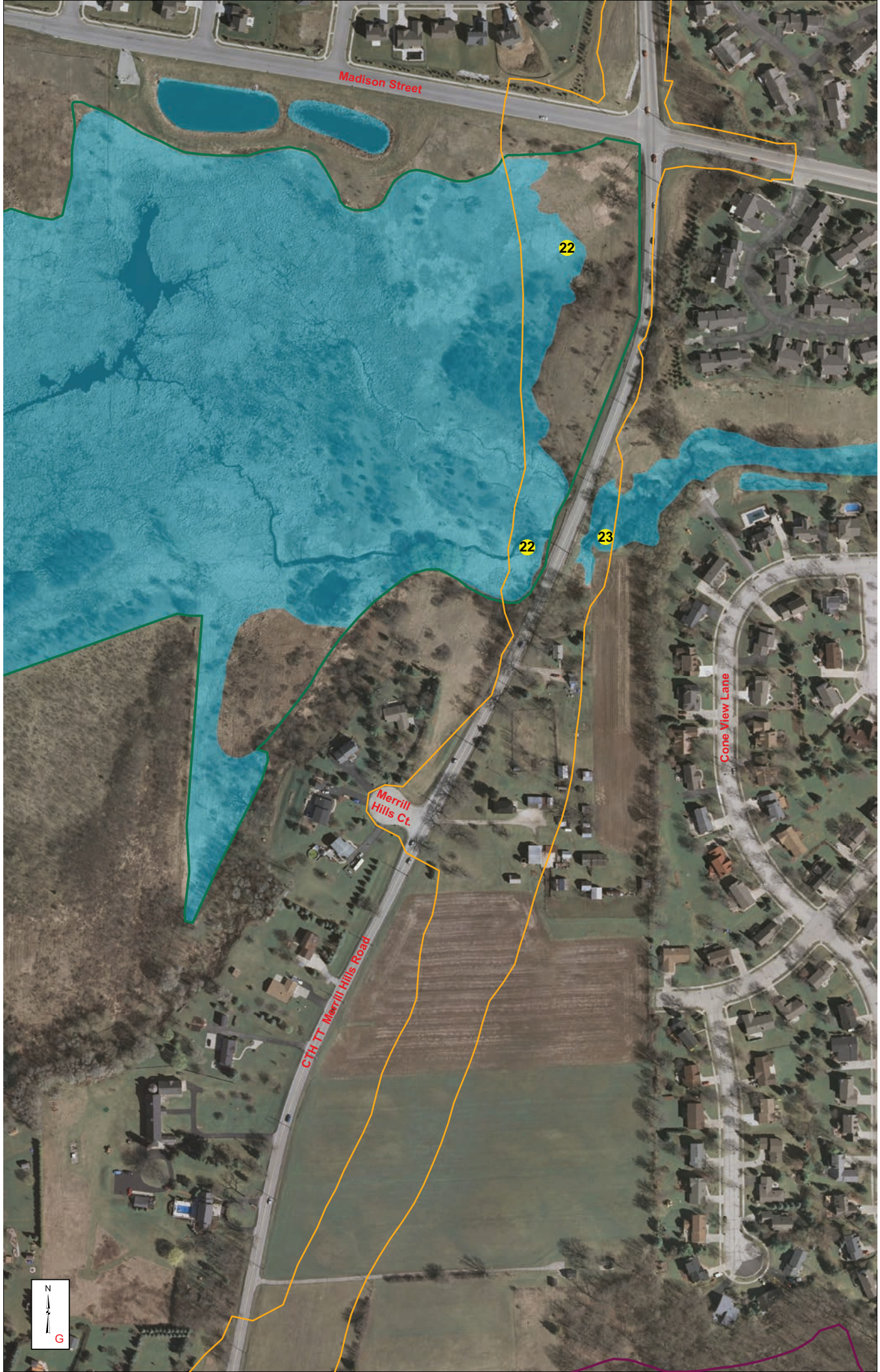


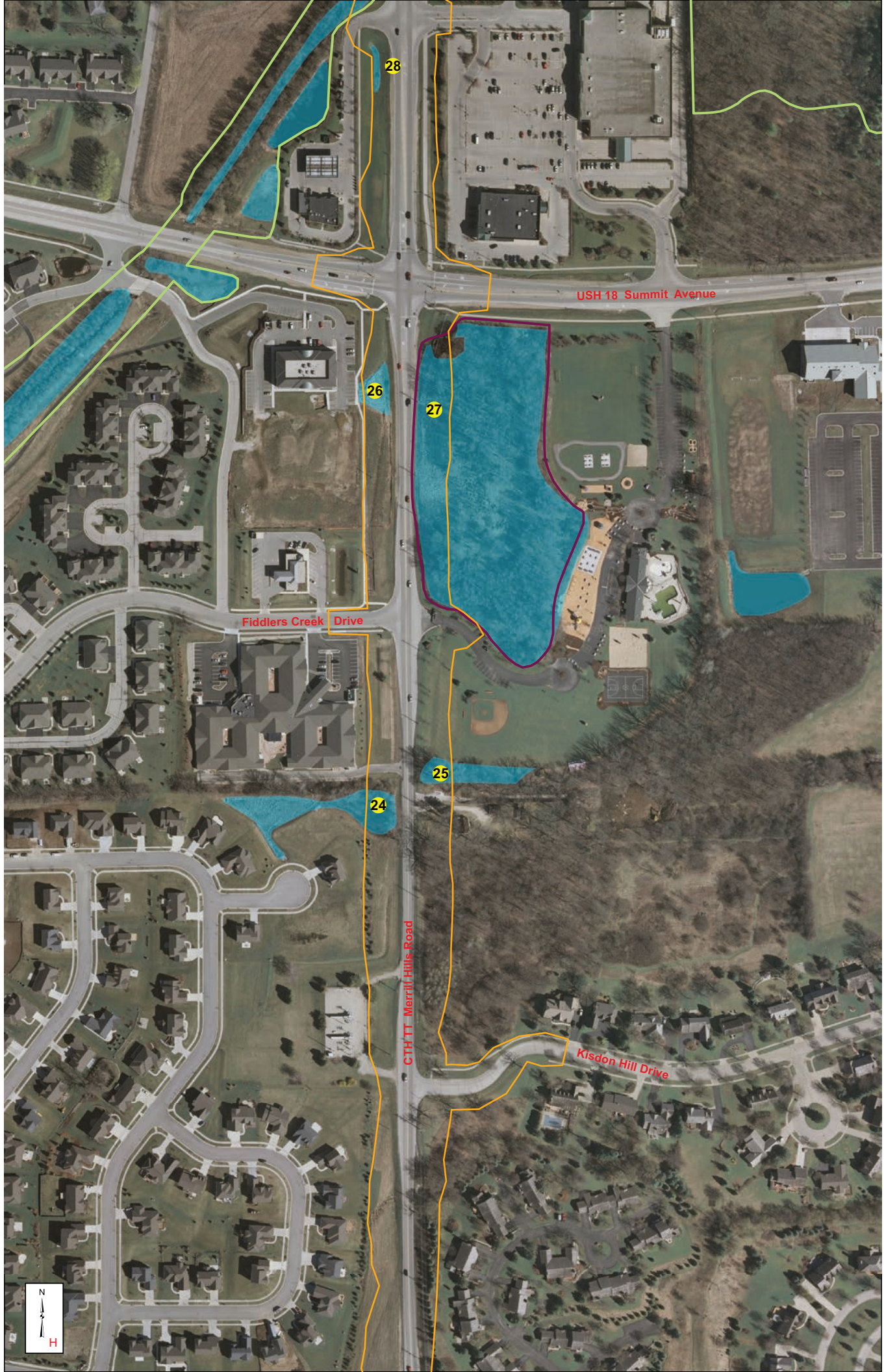














29

30

Meadowbrook Road

Coldwater Creek Drive





Joanne Drive

Lancaster Drive

Northview Road

Meadowbrook Road

31



